EX LIBRIS

HARRY W.
BASS, JR.

E. Clapton. Rhode Island.

THE SCIENCE

OF

GEMS, JEWELS, COINS, AND MEDALS

ANCIENT AND MODERN.

GEN

J. J. Churchill Esq^re
With the best wishes of the Author.

THE SCIENCE

OF

GEMS, JEWELS, COINS, AND MEDALS,

ANCIENT AND MODERN.

BY

ARCHIBALD BILLING, M.D., A.M., F.R.S.

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS;
MEMBER OF THE SENATE OF THE UNIVERSITY OF LONDON;
HONORARY AND CORRESPONDING MEMBER OF THE MEDICAL SOCIETIES OF FLORENCE, BRUSSELS, DRESDEN, AND NEW YORK;
FORMERLY PROFESSOR OF CLINICAL MEDICINE AND OF THE THEORY AND PRACTICE IN THE SCHOOL OF MEDICINE, AND PHYSICIAN, OF THE LONDON HOSPITAL;
EXAMINER IN MEDICINE IN THE UNIVERSITY OF LONDON;
PRESIDENT OF THE HUNTERIAN SOCIETY;
VICE-PRESIDENT OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY,
F.R. GEOL. S., F.R. MIC. S., ETC.

AUTHOR OF

"FIRST PRINCIPLES OF MEDICINE;"
"PRACTICAL OBSERVATIONS ON DISEASES OF THE LUNGS AND HEART,
"ON THE TREATMENT OF ASIATIC CHOLERA," ETC.

NEW EDITION, REVISED AND CORRECTED.

LONDON:
DALDY, ISBISTER, & CO., LUDGATE HILL;
J. MITCHELL, BOND STREET.
1875.

[*The Right of Translation is reserved.*]

LONDON:
PRINTED BY VIRTUE AND CO., CITY ROAD.

THE AUTOTYPE ILLUSTRATIONS
BY SPENCER, SAWYER, BIRD, AND CO., RATHBONE PLACE.

THE PHOTOGRAPHY
BY F. COLES, EUSTON ROAD.

TO

THE QUEEN.

Dedicated by permission.

GEMS.

A TREATISE on Gems naturally embraces the precious stones, or jewels; for although the word "gem" has been for ages conventionally applied to stones with some subject or device engraved upon them,—such as the ring-stones alluded to by Mæcenas, one of the first connoisseur gem-collectors on record, in his epistle to Horace,* — the Romans had no name for jewel but *gemma;* † nor for jeweller, except *gemmarius.* The Romans of the present day, however, apply the word *gioia* to jewel, as in the pretty Italian ballad, where it is used figuratively:

"Benedetta sia la madre, chi te fece cosi bella;
* * * * * *
Tu sei la *gioia* mia," ‡ &c.;

* "Lucentes, mea vita, nec smaragdos,
Beryllos mihi, Flacce, nec nitentes,
Nec percandida margarita quæro,
Nec quos Thynica lima perpolivit
Anellos, neque jaspios lapillos,"—

that is, "seal-rings and jasper pebbles, polished by the Thynian file," besides the jewels which he had previously enumerated.

† "Non gemmis, neque purpurâ venale nec auro"
HORACE.

—"not to be purchased by jewels or gold."

‡ "Oh, blest be the mother who made thee so pretty;
* * * * * *
Thou art my own jewel,' &c.

and the lyric poet Moore writes gem as synonymous with jewel:

"Rich and rare were the gems she wore."

Poetry, music, and the fine arts cheer and ennoble the soul; the nations and individuals who excelled in them are immortalised in the traditions and memorials of mankind, from the time of Homer until now. David, "the man after God's own heart," poured forth strains of harmonious melody and poetry united, which are perpetuated to the present day in the peals of the oratorio.

The Caucasian race of Greeks, combining in themselves the highest union of beauty and intelligence, in their turn held sway, and perfected the rudiments of art which they found in Assyria, India, and Egypt, corrupted by luxury, vice, and idolatry, but still exquisitely beautiful. Even when fallen, conquered by the overwhelming force of Rome, the Greeks* remained the arbiters of elegance, until Rome rivalled its teacher in refinement, and became so imbued with taste and skill, that Italy is still the *alma mater* of the fine arts, and the source of gems.

At almost all times the gem-engravers have cut devices on precious stones—amethyst, emerald, garnet, sapphire, ruby, and even diamond; so that, in fact, as jewels are gems, though all gems are not jewels, we must treat of them together.

Besides the beautiful and interesting *statues*, such as the Apollo Belvedere, and others, copied from the human figure, which is the most beautiful thing in nature, as being made after "God's own image and likeness" (Genesis i. 26), we know that the ancient sculptors exercised exquisite skill, taste, and care in the execution of basso relievo and alto relievo, as evinced in the Elgin and Phigalian marbles, and various

* "Græciacapta ferum captorem cepit, et artes
Intulit agresti Latio."—HORACE, Ep. 11. i.

*metopes** (1[1]) and *friezes* (2[2]) of public buildings, and in the numerous subjects sculptured on *tombs*, *sarcophagi* (3[3]), and *vases* (4[4], 5[5]); also the fine bas reliefs executed in *bronze*, some of them upon various pieces of armour, such as those discovered near the river Liris, in Campania, and presented to the British Museum by the Chevalier Bronsted: there are two of them, which were one on each side of the breastplate of a cuirass, about six inches high: (6) is a cameo by Pistrucci, which gives an exact representation of one of them. Bas relief, then, has been always estimated as a beautiful and effective branch of sculpture, from the earliest periods down to Thorwaldsen (7[7]), Canova (8[8]), and Flaxman (9[9]); and this applies equally to the bas reliefs called gems, cameos (14[14] and 15[15]), and the impressions produced from intaglios or seals (10[10] and 11[11]).

The intaglio and cameo gems are executed in stones much harder than marble, and highly valued, both for the beauty of the workmanship and the quality of the carnelian, sardonyx,

* N.B.—The figures in the plates are uniformly (unless specified as otherwise) of the same size as the gem, coin, medal, or other object represented. The larger figures refer to the plates, and the smaller to the notes.

[1] Elgin metope, the figures of which are about four feet high.

[2] Elgin frieze figures, about three feet three inches high.

[3] Bas relief, on marble sarcophagus, British Museum. Four feet long; eighteen inches high. Achilles discovered amongst the daughters of Lycomedes.

[4] Marble vase, British Museum. Three feet high.

[5] Portland (or Barberini) vase, British Museum. Ten inches high.

[7] Cupid restoring Psyche to life, marble bas relief; the figures two feet high; by Thorwaldsen.

[8] The forge of Vulcan; figures of Venus, Mars, and Cupid, an intaglio, from the marble bas relief by Canova.

[9] Mercury conveying Pandora to earth, designed by Flaxman.

[14] Laocoon, a cameo, sardonyx, by a Roman artist.

[15] Parting of Hector and Andromache, cameo, sardonyx, by Girometti.

[10] Impression of an intaglio, Laocoon, by a Roman engraver.

[11] Impression of an intaglio, Hector and Andromache, by Pichler.

sard, amethyst, emerald, or other stones upon which they are engraved, and which are often of high price. These gem-stones are all so hard as to require diamond to cut them,—hence the Italian epithet, *pietra dura*.

Inasmuch as every *die* used for coining is an *intaglio*, there is an intimate connection between the execution of *gems* and of *coins* and *medals;* thus, the two most celebrated gem-engravers in the early part of this century, Girometti and Pistrucci, were at the head of the die department of the mint —Girometti in Rome, and Pistrucci in London. And so early as the "archaic Greek" period, three or four hundred years before Christ, there is some evidence that at least one engraver, Phrygyllus, executed both coins and gems. Benvenuto Cellini, the immortal statuary, gemmist, jeweller, chaser, and medallist, was chief engraver in the mint of Pope Clement VII.

The beauty of *jewels* consists in the *material*, that of *gems* essentially in the workmanship of the *sculptor*. The gem-engraver, if he has not gone through the studies and training of a sculptor, in drawing and modelling from life, can no more succeed in executing good gems—which are, in fact, *miniature sculpture*—than a miniature-painter, or any painter, can produce works of merit, if he has not practised drawing the superficial anatomy of the living human figure, equally necessary to sculptor and painter; and it is the deficiency in this part of education which has caused much imperfection in some miniature works of painting and sculpture. The beauty of workmanship of most *intaglios* or seals cannot be estimated without making the bas-relief impression; but many of them are engraved in fine transparent stones, which, when held against the light, show every part of the design distinctly,—and such gems are displayed in this manner on frames, in the museums of the Continent, as (16) and (17)—which show the

appearance of intaglios on fine transparent carnelians held up to the light.

The first intaglio seals used for making impressions were on the *cylinders* (18 and 19), in Assyria; and on the under side of *scarabs* (20), or *beetles*, as (21 and 22) in Egypt. The cylinders, however, spread into Persia and Egypt, and the scarabs into Assyria (23[23]), Greece, and Etruria; and some light is thrown on the obscure history of the Etruscans by the investigation of the gems found in that country. The scarabei were, apparently, in as common use with them as with the Egyptians, which was not the case with any other nations, though many scarabei have been found in Assyria, Phœnicia, and the Grecian coasts, whose inhabitants traded with the Egyptians. This circumstance, added to the mode of interment used by the Etruscans, their pottery, and the forms painted on their vases, seem to indicate an Egyptian origin. Expatriated "Shepherds," or some emigration from Egypt to Etruria, may have been the connecting link.

The cylinders are of various sizes, from less than one inch to two or more, and the thickness or diameter about half of the length: they are not always perfectly cylindrical, being sometimes convex, sometimes concave, on the sides; and they are perforated by a hole passing from end to end, the bore being wide enough to admit a thick cord, or ribbon, so that they could be worn on the wrist or neck: they are engraved with various devices,—sometimes a group of figures, as (18-24); sometimes a single one, as (19); the impressions of which are made by rolling them along over wet clay, wax, or other impressible substance (24).

The scarab is of all sizes, from that of a small beetle (20) to that of a turtle, or larger, as may be seen in the British Museum. They are made of every description of stone: the

[23] An Assyrian scarab intaglio.

largest of granite, basalt, &c.; the small ones and cylinders of "loadstone," black hæmatite, chalcedony, sardonyx, &c.

The beetle was an emblem venerated by the Egyptians, as the cross with the Christians; so that it would seem that every individual possessed one, the poorer classes having them made of such a simple material as baked clay. The small scarabs, being of convenient shape and size, were converted into seals, and were engraved on the under side with a device of some kind of figures (21), or a cipher or legend, either in letters or symbols (22), such as are engraved on the obelisks, pyramids, and monuments; and these scarabs are bored with a small hole lengthwise, so as to be worn strung on a thread or wire.

Another form of seal is the very primitive one of a flattish round chalcedony pebble, with sufficient ground off one edge to afford space for engraving a subject, and a hole being made through the middle to receive a string; as (12), a chalcedony, brought from Nineveh, having a very rough attempt in intaglio of a winged horse, the Phœnician symbol (13). Sometimes the hole was enlarged enough to admit a finger. This shape was sometimes modified by being made of an oblong instead of a circular pebble, and the hole made near the end opposite to the intaglio—these being evidently formed from chalcedony pebbles of an oblong shape. Some were made approaching a pyramidal shape, but these are of a later date, and present more elaborate lapidary work; and we have had modern seals made of much the same form, of amethyst, crystal, and other stones, either bored near the top, to receive a ring, or suspended by a golden or other metallic loop—and these are sufficiently ornamental.

When these cylinders and scarabs were first made, mankind were not acquainted with the mode of cutting or engraving hard gems, such as precious stones, or flinty agates, or carnelians, or sardonyx; but they knew how to break *flints* and *chalcedonies*, such as abound in the Nile and elsewhere, by a

hammer or stone, so as to make weapons, such as arrow- or spear-heads, and implements that were used as hatchets, chisels, and knives. At first, therefore, they used splinters of these broken flints to engrave and bore the cylinders and scarabs, which were then necessarily made of stones less hard than the flinty chalcedony used afterwards; these were limestones, such as marble of various colours, and serpentine, steatite, hæmatite, &c., as may be seen in the British Museum, and all collections. Afterwards, when it was discovered that *corundum* and *emery* were harder than flinty stones, such as carnelian or amethyst, &c., they were employed for the purpose of shaping, or engraving, and boring them; and subsequently, when the still harder adamant diamond was broken into splinters, and used by the artists, it enabled them to produce very superior engravings.

We have abundant proof in historical records, and in the allusions of the classic authors, that the impressions of these early intaglio engravings were used much as seals in the present day, sometimes serving as a substitute for a lock,—as, for instance, on the door of a cellar, as in the *Casina* of Plautus, Act 2, Sc. 1, "Obsignate cellas, referte annulum ad me;" or attached to documents, as by the Assyrians and Babylonians (evidences of which have been found in the ruins of Nineveh, by Layard); and by the Egyptians, as when Pharaoh put his ring on the hand of Joseph (Gen. xli. 42). And in Greece the edict of Solon, forbidding engravers to make duplicates of seal-rings, could be only to prevent fraud. Engraved seal-rings of metal without gem stones have been used in all ages. Thousands of these common seals have been found and handed down to the present time, and are purchased as curiosities, but possess no beauty, in general not even so much as common crests and ciphers on the seals of the present day.

The first period during which the arts arose, flourished, and decayed, was about a thousand years—500 before Christ, and 500 afterwards. Previously, it is true, the Egyptians, Assy-

rians, and other Asiatics had reached a certain point; despots, by employing an enormous population, executed gigantic works, pyramids, colossal figures, and temples, many remains of which still exist, and are ornamented with both sculpture and painting of an inferior nature,—that is, though there is considerable correctness of proportion and outline, the stiff figures are either sitting or standing still, or, if supposed to be walking in procession, they exhibit scarcely any expression of action; the only exceptions to this being some of the Assyrian and Egyptian bas reliefs, in which there are spirited representations of men and animals in war and the chase, but at the same time glaring absurdities, as seen in the British Museum.

The Greeks were the founders of *graceful* art, which was prosecuted in Greece, Asia Minor, Sicily, Southern Italy, Etruria, and Rome, from the time of Pythagoras and the Olympic Games, through the Augustan age, down to the fall of the Roman Empire, when the beautiful Latin tongue perished in the ruins; but though a dead language, its apotheosis is established by a host of worshippers. Although there was abundance of beautiful statuary, there do not seem to have been any gems engraved worth looking at, until the Sicilians and Greeks, including the inhabitants of Southern Italy (called Magna Grecia), about the time of Alexander the Great, began to put the heads of their deities (25[25]), kings (26[26]), and well-executed animals, such as eagles (28[28]), bulls, (27[27]), and dolphins (25), on their coins and gems; and from the beauty of their coins (25, 26, and 27) we might infer how good their gems would be.

Collectors give various denominations to the veritable an-

[25] Proserpine; coin of Syracuse, Sicily.

[26] Alexander, also denominated Lysimachus; a Greek coin.

[28] Coin of Agrigentum, Sicily.

[27] Coin of Thurium (previously Sybaris), on the Gulf of Tarentum, Calabria, Magna Grecia, now the Neapolitan territory.

tique gems, as *archaic* (*ἀρχή, beginning*), at the early part of the period mentioned; many of them were engraved on scarabs, or stones shaped like, or cut from, the under side of the scarab, including the *Etruscan* gems,—and these have a border round them, executed with more or less regularity, evidently done in imitation of a twisted cord, as in some early golden ornaments. Some are *Greco-Italian* (150 and 151), found in Magna Grecia and in Sicily, as at Tarentum and Syracuse; a great many of these have the corded border, and on that account used to be called Etruscan by connoisseurs,—but this mark is now acknowledged to be uncertain.

Subsequently, the wealth and luxury of the Augustan age encouraged the Greek and Roman artists, and stimulated them to high perfection; not, however, superior to what was attained in Italy, under the patronage of the Medici, in the fifteenth and sixteenth centuries,—nor superior to the splendid workmanship of our own Wray, Brown, Burch, and Marchant; George Brown, of Dublin; and Pichler, Sirletti, Costanzi, Rega, and others, in Italy; Natter, and numerous excellent engravers, in Germany and France, during the last century and the beginning of this; who were supported and encouraged partly by the rage for buying antiques, which were forged by some of them in numbers, but who were patronised abundantly besides for works professedly their own,—especially Giovanni Pichler, who, so far from forging antiques, when he found that the dealers imposed his works for antiques, signed his name to them afterwards. And in our own time we have had Girometti, Cerbara, Amastini, Pistrucci, Odelli, Saulini, Pannini; and last, not least, Isler survives.

From the earliest period of Greek art, the subjects of these gems were usually classical and mythological,—sometimes original compositions,—as the Diomede with the Palladium (79), attributed to Dioscorides; the Parting of Hector and Andromache, by Pichler (11),—but more frequently copies

of some statues or groups of the sculptors in marble or statuaries in bronze. Thus, there are many gems, antique and modern, with intaglio copies of the statues of the Apollo, Venus, Mercury (29[29]), Perseus, and Laocoon (10), and other groups of the antique and middle ages, and of the more modern Theseus and Centaur of Canova (30[30]); the Cupid and Psyche of Thorwaldsen (7); the Satan, by Lough (31[31]); Sappho, by Theed (155); the Omphale, by Schwanthaler (37[32]), and other modern sculpture.

The gems called *cameos* are themselves really *bas reliefs*, carved out of the substance of the stone, as marble bas reliefs are; their whole subject and beauty visible to the eye, without waiting to take an impression (6, 14, and 15), as is necessary with most *intaglios*. Cameos are cut on stones called *onyx*, sardonyx, &c., which consist of at least two strata or layers of different colour (32); usually one white, of which the figure, face, or whatever the subject may be, is formed (33[33]); the other layer black, brown, red, or some other colour (34[34]), or merely the natural dark gray of the chalcedony (35): Psyche contemplating the Poisonous Vase before opening it, engraved by the author, from an impression of an intaglio of G. Pichler; or translucent and colourless, as (6 and 36), so that the contrast causes the work of the whole, especially the outline, to be more distinct. The term onyx is derived from the Greek word ὄνυξ, which signifies the finger-nail. Should one of the layers be sard, which is of various shades of orange, brown, or red, it is called sardonyx (34); if bloodstone, or jasper, it is called

[29] Intaglio, by a Roman engraver, from the bronze statue, life-size, by Giovanni di Bologna.

[30] Intaglio, by a Roman engraver, after Canova; marble group, life-size.

[31] Colossal marble statue.

[32] Marble statue, life-size.

[33] Cupid returning from the Chase, black and white onyx, by Neri.

[34] Infant daughter of the author, modelled by him in wax, and engraved by Pistrucci, in cameo, on brown and white sardonyx.

bloodstone (42[42]), or jasper-onyx (43[43]); if colourless and translucent, chalcedony-onyx (36[36]), or chalcedonyx; if of an undecided colour—gray and semi-opaque, or black—it is denominated simply onyx. Marble bas reliefs are on the white substance of the marble itself; but every cameo bas relief is on a ground of a different colour, or at least, as just described, a different shade, except when the relief is cut on a ruby (50[37]), sapphire (51[38]), emerald, or other jewel, or on a white or blue chalcedony (39[39]), a crysoprase, or jasper (40[40]). When the onyx consists of more than two layers, the white being in the middle, part of the upper coloured layer is employed for some accessory, such as a wreath of leaves or flowers (42[42] and 47[47]), or some part of dress (43[43]), or a variety of other objects, as in (44[44] and 48[48]).

But sometimes the onyx or sardonyx is treated in a different manner,—as, for instance, when the subject represented is an animal, as a lion, bull, eagle, or hawk, &c.; in which case the figure is cut out of the orange or brown layer, and the white left for the ground, as (46), a fine cameo in brown and white sardonyx, amongst the Payne-Knight gems in the British Museum, of a brown Egyptian antelope (which is a splendid animal, almost as large as a red deer), cut in the brown layer

[36] Head of Æsculapius, from the antique, by M. Elisa Pistrucci, pale Oriental chalcedony onyx.

[37] Head of Diana, ruby.

[38] Head of Cupid, sapphire, by Isler.

[39] An ancient Comic Mask, chalcedony, cameo.

[40] Medusa, red jasper, cameo, Pistrucci.

[42] Norma, cameo, by Brett, bloodstone onyx, three strata; the wreath green.

[47] Ceres, imitated from a Sicilian coin, similar to (25), carnelian onyx, three strata, by Pannini: as matron she wears the πέπλον, by which she is distinguished from her daughter, Proserpine.

[43] Minerva of Aspasius, cameo, jasper onyx, three strata, by Saulini.

[44] A Sacrifice, cameo, sardonyx, three strata, by AMASTINI; part of the third stratum made into a vase.

[48] Œdipus consulting the Sphynx, antique cameo, sardonyx, the third stratum representing the rock.

above the white. There is an enormous cameo of an eagle, ten or twelve inches across, cut in the same way, in the Vienna Museum; and there are many cameos of human faces engraved in this manner, when the sard has been fine, and the white of inferior quality, merely to display the beauty of the stone; but this has a very bad effect, unless the subject be the head of a Moor or a swarthy Egyptian personage or deity, like (49). Sometimes a beautiful cameo is worked upon a sard, which has no white layer, but merely a much greater depth of colour at the front or back, so that, when judiciously engraved, the front shows up, well relieved from the background, which forms a table, lighter or darker than the front, according to the selection of the artist; thus, (49) is a cameo, in a brown Oriental *sard*, from the Nile, with the bust of an Egyptian. The same subject is engraved as an intaglio, on the under side of a large scarabeus, in the British Museum, nearly two inches long; the scarabeus having a head of Jupiter Serapis engraved on its neck. One of the prettiest cameos to be seen is cut from a brilliant orange sard, with a group of three figures, the paler background fading into honey yellow (45).

Much research has been expended to ascertain whence the word cameo originated. It may have been given either by the Greek artists of the Augustan Age, or subsequently, from the word χαμαὶ (*chamai*), "on the ground," as the essential peculiarity of a cameo is that the figure represented lies on a ground (τύπος χαμάι or χαμηλός, a figure on the ground bas relief); and their Italian successors, who nearly discarded the letter *h* from their alphabet, would write *camai* instead of *chamai:* and of course the Italian derivative would end with the letter *o—cameo.* Pliny uses only the Greek phraseology of Herodotus, τύποι ἐγγεγλυμένοι, Latinised into *ectypa scalptura:* and it is only subsequently to the perversion of Latin into Italian, about the year A.D. 300, that we have the words intaglio and cameo in common use.

Camma, the corruption of gemma, in the low Latin of the Middle Ages, means gem (including *intaglio*), not cameo exclusively; and the word *camahotus* was used at the same period to signify not gems, but rough uncut sard or onyx, called *camahuia* in the language of India, from whence those stones were imported for making gems.

After all the learned conjectures of Mahn and others, cameo is possibly derived from *cama*, the Italian for a kind of shell-fish, as shell cameos have been made from an early period.

Another possible derivation may be *cama*, or *kmaha*, Hebrew, קמיעה, rabbin: a charm against the evil eye, a coin suspended round the necks of children in the manner of the bulla aurea of the Romans. There is also "Camée (Hebrew *kamaa*, relief)." —(*Dictionnaire par Dupiney de Vorepierre.*)

Intaglios were much more abundant than cameos: the stones in which they are engraved are more easily obtained, being of but one colour; and, besides, the tools employed by the ancients were less efficient for cutting away the stone, a much larger quantity of which has to be removed in forming a cameo than an intaglio, as will be explained hereafter.

The representations of gems given in this work are photographed and autotyped, and, unless specified as otherwise, uniformly of the size of the original, which is the only way to form a just idea of each, and will convince the reader how much more pleasing cameos are than intaglios. The workmanship and beauty of most cameos can be estimated by the naked eye, whereas the small intaglios require, first, an impression to be taken, and then a strong magnifying glass to look at the impression. These small intaglios, of which myriads are hoarded, are mostly less, some much less, than the size of the nail of the little finger; but Marriette and others, who have published illustrated catalogues of them, have given copper-plate engravings of enlarged drawings, ten, twenty, nay, fifty times as large as the original,—so that the reader, unless he be conversant

with gems, has little notion, whilst looking at the pretty picture before him, what insignificant little things the gems themselves are.

Those enlarged drawings of gems, whether intaglio or cameo, give a very exaggerated idea of the gems, both as to size and workmanship, being often more beautiful than the best original,—that is, some of them being improved upon by three different hands, drawn, first, by the best artist of the day, who would, of course, correct any fault in the proportions of the original; then engraved by the best copperplate engraver; and, finally, touched up by another skilled engraver:* the gem being about the size of a finger-nail, and the beautified engraving of it as large as the hand. Onyx and sardonyx stones, besides being engraved in cameo, are sometimes cut across the layers for the cross-barred intaglios (41); but the onyx is used also for intaglio in another way, called a *nicolo*. In this case, when the upper white layer is translucent, and quite straight and flat, the white is ground down very thin, much thinner than for a cameo, so that the dark showing through it gives it a blue or bluish gray tint (52). The subject being then engraved through the upper layer, which is not thicker than a card, the design is seen with bluish white outside, black within, as (53), a celebrated nicolo, about half the size of the figure represented. A few *cameos* have been engraved on nicolos, the bluish white being of course left thicker than for an intaglio. These have usually a white raised line left round the edge, which has a pleasing effect. There is a beautiful one in the British Museum, a warrior with a shield, which is cut in a third dark stratum. These nicolos seem to have been used more by the Romans, and by the Italians of the cinquecento, than by the engravers of the last two centuries. This word "cinquecento," which is perpetu-

* *e.g.*, Dessiné par J. B. Wicar.—Gravé à l'eau forte par Bertram.—Terminé par Marais.

ally in the mouths of connoisseurs and dealers, requires some explanation; it is the Italian abbreviation of "mille cinque cento" (one thousand five hundred), the *sixteenth* century, when the arts were peculiarly cultivated, after the commencement of the Medicean age, and of the "renaissance" or restoration of the arts and sciences, after the dark ages. It was mentioned, at p. 7, that the duration of the first period of the arts was a thousand years,—that is, from 500 B.C. to 500 A.D. These lines, by a lady amateur, carry on the history:—

"From centuries five to fifteen
Were styled middle ages, I ween:
Of these, the first five were called dark;
The fifteenth revived learning's spark;
The next, cinquecento in Italy named,
For many a useful invention is famed."—C. B.

The herald engravers of the present day have introduced a red and white nicolo for coats of arms and crests. Many intaglios have been engraved in sardonyx and carnelian nicolos, and there is a remarkable one in the British Museum, the ground of which is golden yellow,—which has a very good effect (54).

Large round Indian sardonyxes, of the same three colours (80) as the Indian sardonyx beads, that is, black, white, and brown (101), cut so as to show a circle of white, were used by the ancients as *fibulæ*, brooches, or *bullæ*, and had a hole drilled across through the white, to fasten them on, either by a string or wire, or the tongue of a buckle running through (80).

Some of these real Indian stones are now to be found made into brooches; sometimes the lapidary cuts off the black back, leaving only the white and the brown upper layer—the mark of the perforation across remaining in the white at the back of the stone, which is a tolerably good, but not certain, guarantee of authenticity, as similar sardonyxes are manufactured by the Oberstein lapidaries from onyx stones by a process to be explained hereafter. Sometimes during the cinquecento, and

since that time, the Indian brooch onyx stones were cut into cameos, as (81), a head of Jupiter Serapis, in which the old perforation passes under the head and neck, in the *direction* of the strata, *not across* or *through* them, as in the onyx *beads*.

The gem-engravers executed also *miniature busts*, the faces of which were not more than an inch long, and some very much smaller; many of these are still in existence; they are of white chalcedony, white carnelian, and other hard stones, sometimes only as far as the neck,—the shoulders being made of silver or other metal: see (82), the bust of the Emperor Claudius, which has the *bulla* or brooch just mentioned, on the shoulder, like what is worn by the Scotch Highlanders of the present day in their classical national dress. They likewise made miniature whole-length figures of stone, statuettes equivalent to small bronzes. There is a beautiful one, about five inches high, in the museum in Paris, the subject Christ scourged (Christo alla colonna), standing by a pillar of crystal; the figure formed of bloodstone, the red spots of which give a representation of drops the effect of the scourge.

Very few of the intaglios have a pleasing effect in a ring, except nicolos (54), or those of fine carnelians, or stones which are handsome independently of the engraving. Sardonyxes, with the conventional white band or stripe across them (41), are considered to be peculiarly genuine antiques, but are just as easily forged as the others. The white bar is the effect of the onyx or sardonyx stone being broken or cut across the stripes, instead of parallel to them, as they are for cameos, and these are easily cut and shaped to imitate the antique gem-stones; but if too neatly cut, like modern seal-stones, they would be detected immediately by the connoisseur. It is easy enough to engrave an antique subject—handsome, like (79), or ugly, like (150)—on sard or carnelian, and then you have a "modern antique." The sardonyxes with the cross stripes (called *fasciata* by the Italians), and the orange-yellow sards,

are mostly real Oriental stones, and were apparently preferred by the ancient Greeks for intaglios. A great many scarabs are made of cross-barred onyxes.

Of pseudo-antiques there is an infinitely greater number in intaglio than of cameos, for any ordinary seal-engraver can make a tolerably good intaglio copy of an impression put before him, and, by polishing it intensely, give it the appearance of an antique; and if the stone be a sard or carnelian of a fine quality, such as those used by the ancients, it will pass, especially as the very antique intaglios are not expected to give a fine impression; and altogether will look imposing when set as a ring. The faults of a cameo are more easily perceived than those of an intaglio, of which an impression must be taken to detect the imperfections; and unless there be something very attractive in the quality of the stone, it will be scarcely saleable; and there are some genuine antiques, which are worthless except to have them cut over again by one of our good modern artists, if the stones be of a fine quality.

To *prepare* seal-stones, or onyxes, the rough lumps of chalcedony, carnelian, sard, and onyx stones, are slit, shaped, and polished by the *lapidary*. The slitting is effected by a machine, which turns a circular iron plate, as thin as card-paper, twelve inches or more in diameter; the edge of which being smeared with oil mixed with pounded diamond, saws through the stone, which is then further ground to the required shape by a revolving flat circular plate of lead, or pewter, called a lap, with coarse emery-powder and water; and lastly, the seal-stone or onyx is polished by a lap of wood, or a wooden lap covered with felt or cloth, and fine emery, tripoli, crocus, or other polishing material, and water. The slitting is effected in some countries by emery-powder and water, or oil, instead of diamond-powder and oil, but much more slowly.* These

* Sometimes by a bow with a wire-string, instead of the iron plate; and this method is still practised in India and some places on the Continent.

processes may be easily seen at any time in the lapidaries' shops in London, Brighton, Hastings, or elsewhere. The stones when thus prepared are sold to the gem-engraver.

Jewels are cut, faceted, and polished in a similar manner: but for diamonds the lap must be of iron instead of pewter; and for sapphires and rubies, copper tools are sometimes used.

The seal-stones and onyxes are engraved into intaglios and cameos by small tools (*rotine*, in Italian), shaped like a spike, with a little button on the end (59), made to revolve with great velocity by a lathe (*ordegno*, in Italian), which has a very small pulley on the mandril (58), about an inch in diameter; and the foot-wheel being about two feet across, the speed of the pulley, and of course of the edge of the tool (59) fixed into the mandril, is very great. The tools are iron, and to make them cut the stone, diamond-powder mixed with oil is put upon the edge: and as it revolves, the pressure of the stone against it forces the diamond *spiculæ* into the iron, where they stick fast, which may be seen when the oil is wiped off the tool, and it is magnified by a strong lens, as represented in (60), which is (70) magnified. If the tool be thin, it forms a circular saw (72), a miniature of that mentioned p. 17, line 22; if round or flat edged, a grinder, of varied shapes and sizes, as (62 to 71), by which the gem is engraved. These iron tools are first shaped by the hammer and file, and finished by turning them (*in situ*) with a steel chisel or graver. The tools in Italy are fastened into the mandril by a screw, as represented in the plate (61); in this country, by a leaden plug in place of the screw, so as to slip into a socket in the mandril: this is more quickly changed than the screw, but is not nearly so firm or steady for such work as large cameos, though it answers well enough for intaglio and seal engraving. When a seal-stone or onyx is to be engraved, it is cemented on with sealing-wax to the end of a small round stick, which serves as a handle to hold it by. The polish which was given by the

lapidary is then removed from the face of the seal-stone by emery, so that it can be drawn upon with a brass point. The subject—a head in profile, for instance (102)—is then sketched upon it, and the outline marked firmly by a sharp-edged tool (67),—as (102), a white carnelian prepared for a copy from the coin (26). Round-edged tools (63 or 69) are then employed to excavate as much as is required to a certain depth; the features, ears, and hair are worked out by small sharp-edged tools, of which a few are represented in the plate (64, 67, and 70); but a greater variety, both as to shape and size, are required. It might be thought almost impossible for the engraver to see the very fine parts—lines thinner than a hair, and minute features, as the eyelids, &c.—working with a tool smeared with oil and diamond powder; and some persons seem to think that he works in such parts rather by tactility than sight; but this is not the case, as the oil and diamond are quite transparent under the powerful lens employed in the fine work. As the engraver works on, he takes an impression from time to time, to judge of what he has done; these impressions are made very quickly, not by sealing-wax, which would be too tedious until near the finish, but with a soft composition of wax and lard, or other fat, melted together with vermilion or lamp-black, or both; this is pressed into the hollow by the thumb, and gives an impression of what has been done.

In engraving a cameo, the process is similar: the subject being drawn first by a brass point, it is marked permanently by the tool with diamond-powder, as above; then, instead of hollowing inside of the outline, the whole is cut away outside of it down to the coloured table; straight cuts being made perpendicularly by the thin circular saw (72) down to the table, as represented (103), and then horizontally to meet them, so that slices are cut off at first,—which expedites the business,—the work being not all grinding out, as in the intaglio. The remainder of the engraving is done by the grinding process.

When the engraving—whether intaglio or cameo—is finished, it is polished by a variety of substances in powder, on wooden, tin, or pewter tools, shaped like the cutting tools, or in the very fine parts by copper, as the wood or pewter is too soft to make a very minute polishing tool; ivory is of a consistence well adapted for this part of the work; a little circular brush is also very useful. The first degree of polish may be given by fine diamond-powder, or charcoal, on wood; but care must be taken not to efface the fine work, as they both cut very sharply: fine emery-powder is also used,—but these are all too hard to give *a fine gloss*, which is best accomplished by some substance of the same hardness as the gem-stone itself. Thus tripoli earth is the best for the carnelian and other flinty gems, being itself the flinty remains of fossil animalcules. Metallic oxides are also used, such as crocus (oxide of iron), rouge (oxide of copper), and oxide of tin (called putty-powder); pumice, rotten-stone, and many other substances, are employed by various engravers. Rotten-stone (alumina) is harder than tripoli (flint).

Attempts at gem-engraving were made ages before the lathe was invented; for instance, the intaglios scratched upon the early Assyrian and Egyptian cylinders (18), and the subjects and inscriptions on the under side of the scarabei (21, 22, and 23); these must have been executed by splinters of corundum or emery set in metal, like a glazier's diamond (73 and 74), and worked like a graver, or turned round as a drill (75), in some parts by the hand, or a drill-bow and string, producing a succession of round hollows, to be afterwards modified by the other tools: as may be seen in (93), which was left unfinished, the hollows being visible at the feet and one hip of one lion. Many of these intaglios, being of amethyst, chalcedony, and other flint-stones, were too hard to be acted upon except by corundum. The ancients also found means of boring holes through the hard stone cylinders and

scarabei, by the drill (75) and bow. This mode of drilling has existed during four thousand years, and is still employed by lapidaries of the present day. A modern method is by the lathe spinning an iron or copper tube (76), on the end of which diamond-powder with oil is applied, so that a little cylinder of the stone is cut out, and a hole thereby made. At a later period, when the inferior diamonds were brought into use instead of corundum, they were of course more efficient, from superior hardness.

Engraving with the diamond-points was practised even after the invention of the engraving lathe, when some parts of the gems were executed by the diamond-points, others by the lathe and diamond-dust. During the last century, Sirletti engraved chiefly in that way, and his gems passed for antiques. Giovanni Pichler, the best engraver of that period, cut some gems with the diamond-point, merely to show that they could be executed well in that way, especially one cameo of a female head, which was thought to be an antique, having deceived the best judges of the day. The anecdote is, that some rival artist, speaking of Giovanni Pichler, acknowledged the excellence of his work, but said that it could not stand in competition with the antique, and could never be mistaken for it. This being reported to Pichler, he engraved a female head with the diamond-point, and having broken a bit off, gave the remainder to one of the dealers to show to the connoisseurs as a disinterred fragment; it was produced at a meeting of these wise-heads, including the sceptical artist, who concurred in proclaiming it a veritable antique fragment; when Pichler told what he had done, and produced the other piece in confirmation. Gems worked in this manner were made abundantly in the cinquecento (sixteenth century), and during the seventeenth, and beginning of the eighteenth, by the forgers of antiques, and especially deceived the connoisseurs, who seeing the inequalities in the tables of the cameos, and the

slight scratches—marks of the diamond-point (visible by means of a strong lens)—in both intaglios and cameos, thought they must have been done at a remote period, before the invention of the engraving lathe; and the use of the diamond-points was never quite relinquished until the present century.

Onyx or carnelian is not cut by the diamond-point so quickly as shell is by a steel tool; nevertheless, more easily than might be supposed from the hardness of the flinty material.

It is evident that the early intaglios were employed more for marking property, or, as we say, setting a seal upon a thing, than for beauty; there are abundant allusions to this in the old classics, as mentioned in p. 7; and doubtless the high polish given to them, and upon which so much stress is laid by collectors, was for the purpose of preventing the wax, or other materials, from sticking to them, as alluded to by Pliny (*Hist. Nat.*, lib. xxxvii. cap. xxx.). A moderate degree of polish, however, is sufficient for this purpose.

The immense number of scarabs, with intaglio devices of various kinds on them (see page 6), of such poor materials that they evidently were used by the lower classes, forbids the idea that they were in common use as seals, but rather carried as charms, like the little silver crosses, Madonnas, and saints, which are the staple traffic of Loretto; and, besides, the inscriptions on many of the scarabs are benedictions and pious ejaculations—like those from the Koran, engraved on Mahometan seals—as "ma sh'allah" (what God wills!) on (165B), the turquoise signet-ring of a Turkish officer, brought from Mecca,—and which inscriptions read off from the seal, not being reversed as seal-ciphers, &c.

Intaglios in general produce no effect in brooches, bracelets, necklaces, or head-ornaments: thus the very valuable intaglios of the late Duke of Devonshire, set in a suit, consisting of necklace, bracelets, and diadem, are perfectly ineffective as

ornaments, notwithstanding the exquisite workmanship of the jeweller, and here and there a few showy gems scattered amongst them, which only make the others look more dull by contrast. Cameos, on the contrary, are effective. There are very few antique cameos dating before the Augustan Age, and those small and of low relief, because they were engraved by the adamant (or corundum) point, which could cut but very little and very slowly, and could not take out slices of the stone, as seen in (103), nor grind it down rapidly, as with such a tool as (62): hence these little antique cameos are very flat, like a coin or medal.

These archaic cameos in general have very little of the table or ground left between the figure, or head, and the edge (48), because it was an object to the engraver to have as little as possible to cut—or rather scrape away—with the pointed tool; but this not being of consequence with the engraving engine, a broader border is now generally left, which has a much better effect, though the devotees of the antique admire a border which leaves scarcely room for a gold setting; not considering that it was "the necessity, and not the will," of the ancient artists which compelled them to stint the margins of their cameos. On the other hand, the impressions of their intaglios have wider borders in proportion, whether flat (79), or in *cabochon*,—as the seal is called when rounded and raised like a carbuncle garnet (83[83]).

Whenever or wherever art has been patronised, there has been a sufficient supply of artists; but there are only a few of them who pass mediocrity, a few who possess all the requisites for executing as well as planning works. When we consider these requisites, we can understand how a failure of any one of them leads to deficiency in the works produced: thus a man

[83] Intaglio of an Egyptian griffin, with its paw on a wheel; on a brown Nile (Oriental) sardonyx, *en cabochon*.

may have taste for beauty, and imagination to combine or group his subject, and yet be deficient in manual dexterity, and unable to execute what he has projected; as occurs also with some painters and sculptors.

The process of gem-engraving is soon learned; and where there is taste and skill, there is no reason why the same excellence should not be attained now as 2000 years ago. The process of engraving is simple, and we have the advantage over the ancients in tools and machinery. Even in the Augustan Age, it is very doubtful whether the engravers had the same tools which are used at present; but they certainly had in the Medicean,—though not at the time of the very antique Assyrian or Egyptian attempts at engraving: these are sold at high prices as curiosities, but are mere rubbish as works of art: a few forgeries, however, tolerably executed, have been passed off as of that date. From the time when the engraving lathe was invented, artists have been more on an equality. A few of the antique gems, engraved about the commencement of the Christian era, those of 1500 years later—that is, the cinquecento, or Medicean era—and those later still, during the last and the beginning of the present century, are equally good. Nothing can surpass the works of Natter, Sirletti, Pichler, Marchant, and others, in intaglio; for whatever may be said of the works of Dioscorides by connoisseurs, they could not be better than those of Pichler or Natter, which were purchased as his—and they are all equally good. We may say the same of Girometti and Pistrucci, especially for cameos; and though they are both gone, the mantle of Pistrucci has fallen on his daughter, who is now one of the best cameo-engravers in Europe. Mr. King in speaking of Coldorè, says that his portraits of Henry IV. might be passed for antique if the well-known features did not betray the date.

After all, there is a kind of superstitious veneration for the

name of Dioscorides; but let us consider his most vaunted works,—the intaglios of Julius Cæsar, the Io, and the Diomede. The Julius Cæsar (84) is deeply and well cut, but assuredly there never were such eyes in any human head in any nation of the earth; the wreath is most ungraceful, and the point of the nose is under-cut.* The Io (85), once so highly valued, and at last so cheaply bought, is very beautiful as a deeply cut front face, but "the nose is under-cut on one side, so that a plaster or sulphur impression cannot be taken" (King, p. 236), as it breaks in drawing off; impressions can be taken in sealing-wax if drawn off before the wax is cold, as that yields, and does not break off like the brittle plaster. What would be said of any seal-engraver of the present day if he were to commit such faults? The best of the three is perhaps the Diomede (79); it is beautiful—especially in the outline—but a shallow engraving. The portrait of Julius Cæsar attributed to Dioscorides may have been copied from a marble bust after the death of both, as seals and cameos are now engraved from busts of Fox or Pitt, Washington, Wellington, Albert Prince Consort (169),† or Cromwell (86[86]).

We may now proceed to discuss the various precious stones from which jewels and gems are formed. First, the Diamond, which is the brightest and purest of them, and in its brilliant state the most scarce and valuable substance on earth; never-

* This refers to the celebrated gem on sard (carnelian), in the Payne-Knight Collection of the British Museum; which, with the exception of the eyes, resembles the marble bust of Julius Cæsar in the first Gallery. There is now another similar one (just obtained with the Blacas Collection), on hyacinthine garnet, "by Dioscorides" (?)—celebrated enough also; but the right eye squints, and the nose is not like Julius Cæsar's, being more like that of the Duke of Wellington, or, as Raspe says, of William III.

† Impression of an intaglio by Wilson, from the bust (life-size) by Theed (159).

[86] Impression of an intaglio by Wilson.

theless, the constituent material of diamond is the most abundant on the surface of the globe. This material—which has been fully proved to be carbon—is the predominant component of every organic or living thing, whether animal or vegetable; for all animal flesh and vegetable substances, when burned, are reduced to charcoal or soot, which is carbon; or they are partly converted into carbonic-acid gas, which exists everywhere on the surface of the earth, mixed with the natural atmosphere, in just sufficient proportion to be useful to vegetables without injuring animals. Diamond is carbon in its pure crystallised state, as rock-crystal is flint in a pure state. Diamonds perfectly free from colour are said to be of the first water, but they are found of every colour of the rainbow—red, orange, yellow, green, and blue, and some quite black. A *coloured* diamond, perfectly pure and free from flaws, may be, on account of its rarity, almost as valuable as a brilliant, of the same size, of the first water; as, for instance, the celebrated blue diamond (?) in the collection of Mr. Hope.

We are accustomed to associate carbon with blackness, because all charcoal is carbon, though all carbon is not charcoal; the blackness is only the effect of fire, for white wood and a lady's skin are composed principally of carbon, and both are blackened by being burned. *Crystallisation* generally produces transparency and brilliancy, and we see that even *diamond*, in its *uncrystallised* amorphous (shapeless) state, in which it is denominated *carbonate*, is dark and opaque, like flint. Carbonate is found amongst the gravel in diamond-mines, and was thrown away as useless, until somewhat recently it was discovered that it consists of diamond, and has the same property of cutting. Some of this carbonate shows a subcrystalline appearance, like massive corundum or emery. Many compounds of carbon (diamond) are transparent; for instance, carbonic-acid gas, in the upper part of a bottle of soda-water—a compound of diamond, or carbon, and oxygen

gas—is invisibly transparent. This same gas, combined with lime, forms the clear, transparent, double-refracting (Iceland) spar, when *crystallised;* but the same compound of gas and lime, *uncrystallised,* is opaque,—as, chalk and limestones of various colours. Diamond is the hardest substance known, and is employed, therefore, by artists to cut and engrave all other precious stones, jewels, and gems, and is used to shape and polish fine diamonds into brilliants; for which purpose diamonds of bad colour and not clear, and also carbonate, are employed.

It is impossible to say how early in the history of the world it was discovered that the diamond could cut and polish diamond; but we read in the Old Testament (Exodus xxviii. 18-21), that one of the jewels in the breastplate of the high-priest of the Jews, and engraved with the name of one of the tribes, was a diamond; and this is quite intelligible, as one of the gravers, or drilling instruments (74), described at page 20, could cut letters on the surface of a diamond, though much more slowly than by the tools which are now employed, and by which a brilliant can be engraved with comparative ease. Mary Queen of Scots had her coat-of-arms engraved on a brilliant (87); and it is recorded also that the portrait of Don Carlos, the unfortunate son of Philip II. of Spain, and also that of one of the popes, besides other subjects, were engraved on diamonds. Mr. Martin has a splendid brilliant with an inscription cut on it.

The Jews themselves—the best Hebrew scholars—do not know from the Hebrew names what are the stones alluded to in the Bible; and it is difficult to understand some more modern allusions to the names of stones; as, for instance, that mentioned by Theophrastus, or later by Pliny, as hyacinthus, must, from their description, be not the stone which we call hyacinthus (jacinth), but that which we call sapphire; and the stone which they named sapphire, we denominate lapis-lazuli.

No person had been able to ascertain of what stone the celebrated Murrhine vases, mentioned by classic authors, were made. Not long ago, many were, and some still are, content to believe that they were variegated agate, or chalcedony, such as are cut into tazze in India and Germany at the present day; but a writer in *Fraser's Magazine* suggested that they were of fluor-spar, which may now be demonstrated as follows: it is the only stone which answers to all the descriptions and allusions made by classic writers, more especially that of their colour varying from purple to white, and then shading off to red, and the rainbow (*cœlesti arcu*) form of the stripes (88), and variety of colours (Pliny, *Hist. Nat.*, lib. xxxvii.); which purple and red shades—especially the purple—never exist in agates; moreover, the peculiar fact that they were, according to the oft-quoted passage,

"Murrheaque in Parthis pocula cocta focis,"

improved by being heated in the fire, according to our present knowledge, stamps the character as fluor-spar, which (unlike agate) undergoes this change by fire; as may be seen in Mr. Tennant's collection (149 Strand), and elsewhere. Stripes of some agates change to a carnelian-red when heated, but then no parts of them either are or become purple. These Murrhine vases, and the stone of which they were made, were brought to Rome, for the first time, by Pompey the Great, from his Parthian expedition, and were thought of sufficient consequence to be made a special presentation to the temple of Jupiter Capitolinus; and the peculiarities of the fluor-spar are also specified in the statement, that the stones were "of moderate thickness"—"crassitudine rara, quanto dictum est vasi potorio, . . . escariisque" (*Hist. Nat.*, lib. xxxvii. cap. 7 and 8)—"fit for making dishes and drinking-cups,"—which latter resembled the bowl

of one of our modern flat champagne-glasses, or a saucer; and this is the exact character of fluor-spar; for if it be required to make a deep vase of it, nine or ten inches high—as no piece can be found so thick—it is necessary to cement two or three pieces together, one above the other, as may be seen on examining the Derbyshire vases; whereas agate may be found large enough to make a punch-bowl. As it is recorded that the Murrhine vases were introduced *first* by Pompey, they could not be agate, which was common and well known *before* his time; hence, Murrhine must not be interpreted agate. It is a remarkable corroboration of this opinion that, although fluor-spar is such a rare mineral, it has been seen by a modern traveller in the neighbourhood of the Caspian Sea,—just the locality of the Parthian expedition.

It may be thought surprising that no fragments of fluor-spar vessels have been found by the curiosity-hunters in Rome, but there are several circumstances which may help to account for this: in the first place, these Murrhine articles must have been few in number, and not in fashion for more than 50, or perhaps 100, years; whereas the objects of glass, marble, crystal, gems, &c., have been manufactured in abundance for above 2000 years. For various reasons, it is not likely that many of the Murrhine vases ever existed; they were difficult to execute with the machinery of the day; nor is it likely that many, if any, were cut from the rough stones brought by Pompey to Rome, both on account of the difficulty, and because it is very likely that the Romans—notwithstanding that it was known the stones were coloured by fire—did not obtain the secret of the Parthian mode of heating and bringing out the colours of the raw material—"blue John," which is *naturally* only blue and whitey-brown, sometimes nearly transparent, and rarely green; and their attempts at manufacture would, consequently, be failures. It is not impossible, also, that even the mines

from which the material was brought might have failed—as is actually the case at present with the Derbyshire mines—and the material is not of sufficient value to justify the expense of searching for new veins, the spar having been originally found by accident in mining for metals.

As to the chance, then, of any Murrhine cup, or fragment, being discovered—supposing that that substance were fluor-spar, according to the above calculation—it would seem that the odds against their being ever met with were very great, even granting that the substance were as durable as marble, agate, or even glass. But this is by no means the case: the fluor, from its structure and cleavage, is much more brittle and friable than marble or glass of the same thickness; and having been rendered more so by heating, the Murrhine would crumble away under the rough process of digging excavations; and small fragments, if turned up, having no *engraving* upon them, or any other evidence of *art*, would present only an appearance of morsels of coloured glass, mosaic, or enamel, and would be thrown aside as such. And if—notwithstanding the small probability of any Murrhine relic being discovered by the archæological searchers—some day or other a fragment should be *disinterred*, it would be difficult to ascertain *how recently it had been buried*. There is little doubt, however, that if Bonelli (whose name will survive in the annals of connoisseurship as long as that of any other detected impostor, from the time of Archimedes to Giuseppe Balsamo Cagliostro) were alive, and got a hint of this, it would not be long before he would offer for sale a fragment of a Murrhine vase, "found in Pompeii, the Palace of the Cæsars, or the Appian Way."

Besides what has been already stated to show the difficulty of knowing exactly what stone was meant, at such a remote period of the Jewish history, by the word we translate "dia-

mond," out of four quotations from the Old Testament, we find two of the writers give one name to the stone in question translated "diamond," two another; thus Moses writes it, in Exodus xxviii. 18, יַהֲלֹם, "ya halom;" Ezekiel, the same; whereas, Jeremiah and Zachariah use the word שָׁמִיר, "shamir," which is translated "diamond," and which is the name for diamond in the Hebrew of the present day.

There are many reasons for believing that, except the few uncut, bright, and sparkling diamonds found on the earth, in their natural crystallised shapes, diamond was scarcely known at that period. Everything said by Theophrastus or Pliny of *adamant*—which is generally supposed to mean diamond—is applicable to the white and transparent *precious corundum*, now called *white sapphire* (89 and 90), which may be seen in the British Museum and elsewhere. The word "adamant" (ἀδάμας) had originally an adjective signification ("not to be subdued"), but, similarly to the adjective "brilliant," is used substantively. This white sapphire is beautiful and brilliant, and is, except diamond, the hardest stone in the world; it is identical in composition with emery or corundum (adamantine spar), which was at that epoch employed in the East for cutting and boring sards, amethysts, carnelians, and other hard stones, to make cylinders, scarabei, and gems, as diamond is used now. This white sapphire agrees with the description of diamond, except in what was false; such, for instance, as the popular error related by Pliny (*Hist. Nat.*, lib. xxxvii. cap. 15), that a diamond, if laid on an anvil, and struck by a hammer, will not itself break, but split the anvil. Many fine stones must have been sacrificed to this superstition. On the contrary, diamond is brittle, and easily broken by a blow, and reduced to powder by the steel pestle and mortar, used to make diamond-powder, for cutting and polishing jewels and gems; for which purpose either the waste cuttings or splinters of

brilliants, or ill-coloured, cloudy diamonds (not good enough to cut into brilliants) are sold under the name of "bordt." Pliny also states, that if a diamond were placed near a loadstone it deprived it of the power of attracting iron; which no doubt he believed,—for with all his industry he was most credulous. We may, however, trust to what he states as having witnessed; and he says, "the *adamant* is akin to rock-crystal in polish, and the shape of its crystals hexangular, tapering to a point (90)—that is a *pyramid*—or two of these joined together at the base" (89) ("laterum *sexangulo* lævore turbinatus in *mucronem*, ut si duo turbines latissimis suis partibus jungantur"),—which is the shape of corundum crystals. And he thus disproves its being diamond; for the *pyramid* of diamond is never six-sided, but four-sided (91), and *not* spear-pointed (89), as the word *mucronem* implies. Moreover, he speaks of the localities in which there was adamant, "as Ethiopia, near Meroe, in Egypt, in Arabia, and Cyprus;" all places in which diamond is not found and corundum is; and he only incidentally mentions India, the country *par excellence* for diamonds.

Doubtless, long before the time of Pliny—which was subsequent to the invasion of India by the Greeks—a few real diamonds, with their natural lustre, were brought to Western Asia, Greece, and Rome, as early as the time of Alexander the Great, or, earlier still, that of Moses. But it is clear that they were called adamant, and not distinguished from the adamantine white sapphire. The muddy-white sapphire would not be used for jewelry, but, as described by Pliny—("in tam *parvas* frangitur *crustas*"—"expetuntur a scalptoribus *ferroque includuntur*, nullam non duritiem ex facili cavantes") —"broken into splinters," —"set in iron," to make engraving points (73 and 74) and drills (75), and to be ground into powder, to be used with oil, as the discoloured

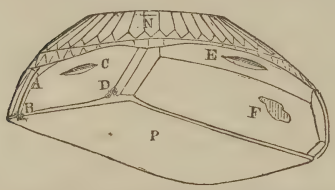
diamonds have been since they have become commonly known.

If diamond-powder had been known in the Augustan Age, the cutting and polishing of the first diamond, as for Charles the Bold, Duke of Burgundy, would not have been left till 1475; and the diamonds of Charlemagne, in 800, would not have been set with their natural polish, and in their natural shape ("pointes naïves") (91) the double pyramid. In every museum of minerals, and at the diamond-merchants', may be seen the beautifully brilliant diamonds in their natural shapes (of which there is a great variety), in the condition in which they were found, at an early period of history, when they were considered "the most precious of all possessions, seen only on the hands of kings."

Originally, a comparatively small number of diamonds were found in the mines, with a naturally brilliant surface, and of fine form—such as the eight-sided, or double pyramid, and a few other shapes; these natural brilliants were, of course, the first which were used as jewels. Even rough diamonds have such a glistening lustre as to be easily distinguished from the whitest and brightest sand or gravel with which they may be mixed in the mines. Subsequently, diamonds of fine water were polished by the East Indians in the form in which they were found, by rubbing them against each other, and by the lap, though they did not by this means much alter the shape; as was the case with the Koh-i-noor, before it was brought to this country and recut under the direction of Mr. Garrard.

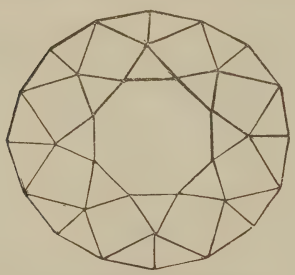
"The origin of the Koh-i-noor is older than any historical "records reveal, but it can be traced as far back as the begin- "ning of the fourteenth century, when it came into the trea- "sury of Delhi; and from this time it became intimately "associated with the entire history of the Indian wars and "dynasties, until, on the late annexation of the Punjab, it

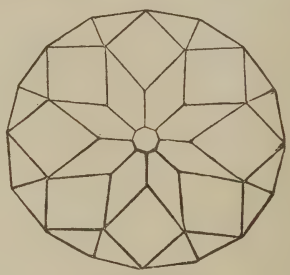
"was taken possession of by our government, brought to "England in 1850, and presented to the Queen. It was shown "at the International Exhibition of 1851, in the state it was "received, weighing 186 carats; "but it was so badly cut that its "brilliancy scarcely exceeded that "of a piece of crystal, and it had "several flaws and defects in its "structure (marked by letters).



Shape of the "Koh-i-noor," as exhibited in the Crystal Palace in 1851.

"The Queen, after taking advice from competent judges, "decided to have it recut; which was done in London (by "workmen expressly brought over from Amsterdam for the "purpose) in 1852. It has now the form of a regular brilliant;


Upper Surface in its present state.


Under Surface.

"and, though its weight has been reduced to $102\frac{1}{4}$ carats, "it has become, what it never was before, a most splendid "jewel, worthy of its royal mistress, whose unsullied diadem "may it long adorn!"*

All stones, including the diamond itself, can be cut or sawn in pieces by a thin iron slitter (72) with diamond-powder.

Until the beginning of this century no diamonds were known except those from the East of the Old World; but for

* *Diamonds.* By William Pole, C.E., F.R.S., F.G.S., &c. A most satisfactory and admirable monogram; reprinted, for private circulation, from *Macmillan's Magazine*, 1861. The illustrations to this reprint of an extract from it have been kindly supplied by Professor Tennant.

more than thirty years there has been a new and abundant supply from the New World, from the rivers of Brazil, which have brought them down from the Andes—mountains which rival the Himalayas and Gauts in their height and products. Diamonds have not been much sought for yet in Australia, but are beginning to be found; and they exist there doubtless in abundance, in situations geologically similar to those in which gold and diamonds have been found in Asia, America, and Africa. It was not until the middle of the fifteenth century that Van Bergem, a Dutchman, adopted a mode of grinding, shaping, and then polishing them, like other jewels, by means of diamond pounded into powder, and mixed with oil, on a metal wheel, called a lap; and it was two centuries later, in the time of Cardinal Mazarin, that the best true brilliant shape was discovered and adopted.

There are three modes of altering the shape of a diamond:

First, by breaking. The diamond, though so hard, is very brittle; laminated in structure, and breaks easily in the direction of the laminæ, parallel to the facets of a regular octahedron (91); so that an experienced cutter (breaker?) makes a slight notch, or scratch, with a diamond-point where he wishes it to break; and then putting the edge of a knife in the notch, or sometimes without making even a notch, strikes the back of the knife in the proper direction, and so breaks off the piece.

Secondly, by grinding one against another. For this purpose the two diamonds are fixed, by cement, on the end of sticks as handles, and then rubbed against each other; and they wear each other, very much as two lumps of sugar would do, though not quite so rapidly.

The third method—slitting—is very seldom resorted to.

When the diamond has thus been brought roughly to the required shape and number of facets, each facet is polished separately, on an iron lap, with oil and diamond-powder; either

the dust caught from the grinding, or diamond-bordt powdered, or carbonate.*

The lap for polishing must be of *cast*-iron; *wrought*-iron—which is used for the engraving or slitting tools—is too *tough;* which, although an advantage for those purposes, on account of the spicula of diamond *sticking* firmly in it, does not answer so well for polishing, which requires that the particles should yield more.

The prices of diamonds do not come within the scope of this work.

The jewels next to diamond in hardness are the CORUNDUM *jewels*, SAPPHIRE and RUBY. *Corundum* is crystallised *clay*, as *diamond* is crystallised *charcoal*, and corundum *also* occurs of *all* colours. The name of diamond does *not* change according to colour, but that of corundum *does:* thus, blue is called sapphire; red, ruby; violet, *Oriental* amethyst; orange or yellow, *Oriental* topaz; green, *Oriental* emerald.

Real topaz, emerald, and amethyst, are distinct minerals, different from corundum, and to be described hereafter.

Sometimes corundum—mentioned above as white sapphire—is perfectly colourless, like rock-crystal and diamond; and it is said that pale sapphire may be made quite colourless and of a pure water by heat. The dark or light brown, and gray—which is the common *corundum*, or adamantine spar in *lumps*—and the dark-coloured, called *emery* (which bears the same analogy to corundum as carbonate does to diamond), are reduced to powder, and employed for grinding down and polishing all stones, jewels, and gems, except diamonds, and also for polishing hard substances, such as looking-glass plates, steel, &c.

* In diamond mines lumps of this black substance are found resembling bits of charcoal or coal, which are diamond uncrystallized, and which may be used as bordt (see page 26).

As *diamond* (carbon or charcoal) is an ingredient of all *living* things, animal and vegetable, so clay, which is the component of sapphire and ruby corundum, exists universally as a constituent part of the *soil*, earth, or mould, which supports animals and vegetables. Sapphire, ruby, and all corundums consist of clay, of which *pipe-clay* is a specimen, and which is the oxide, or rust, of the metal *aluminium*. We are in the habit of associating an idea of more or less darkness of colour with rust, on account of the rust of iron; but the rusts of metals are of different colours; iron and copper, red; lead, yellow; silver, black; bismuth, zinc, and aluminium, white. This *oxide of aluminium clay* forms a proportion of every *soil* where vegetation is going on, mixed with flint sand, lime, and other matters. Its hardness is well known when made into bricks and tiles, or pottery, which are generally coloured by iron; and a bit of a broken tobacco-pipe—which is made of pure clay—will scratch glass, which shows its hardness. Its natural hardness is also seen in the statuettes made of it, and called Parian, and in some porcelains, of which it is the principal ingredient. Some sapphires and rubies, when cut round and polished, show rays from the centre to the sides, in a six-pointed star, with a *chatoyant* play of light; these are called *star*-sapphires, or rubies, and are much esteemed. The corundum jewels have been found hitherto chiefly in Asia, though most likely, like diamonds, they exist in Brazil; and lately they have been found in Australia. Rubies and sapphires are so extremely hard, that it is very difficult to produce a gem from them of any merit or finish; there are, however, a few tolerably good intaglios and cameos extant in both: (51) is from a cameo head of Cupid, by Isler, in sapphire; and Pistrucci executed a beautiful front-face cameo of Diana on a ruby, like (50), about half an inch long.

It is difficult to ascertain accurately the causes of the varieties of colour of jewels, but it has been stated by Berzelius

and other celebrated chemists, that the ruby is tinted by peroxide of iron, and sapphire by the protoxide, which exists in a large proportion in emery, corundum; and many of the sapphires have a violet tint, which may possibly be produced by an admixture of manganese with the iron. Some later experimenters assert that chrome exists in both sapphire and ruby; but the causes of the various colours of jewels require much more investigation, to afford any degree of certainty. The beautiful and brilliant colours which have been recently obtained from gas-tar show that modifications of carbon, sulphur, &c., produce brilliant tints; and the analysis of lapis-lazuli proves that the beautiful blue of ultramarine is produced by a union of sulphur with sodium,—which blue, by the addition of a third substance, may possibly be converted into red or green; changing the corundum, sapphire, into ruby, or Oriental emerald. For sometimes one end of a crystal of sapphire will be reddish or greenish.

Topaz is the jewel next in degree of hardness; the crystals are four- or eight-sided prisms, striated, the ends irregularly faceted; it consists of about one-half clay, one-third flint, and the rest fluoric acid. Topazes are not much esteemed for jewelry, and seldom, if ever, engraved as gems; the best known are those of a yellow colour, but they are sometimes greenish; and some of the yellow, when burned, turn to a very pleasing pink, and are called burnt, or pink, topazes. There are some found in Brazil as perfectly colourless and clear as rock-crystal, or diamond, or white sapphire (corundum), and are more brilliant when polished than any jewel, except diamond or white sapphire; these go by the name of nova minas, or nova-mina diamonds, and are beautiful. The yellow topazes owe their colour to peroxide of iron. There are a few blue topazes, which rival the sapphire in beauty, though not in hardness.

Emerald is still less hard, containing less clay, more flint, and another earthy matter called glucine, besides traces of lime

and iron; and its beautiful grass-green colour is attributed to the oxide of the metal chrome. Its crystals are six-sided prisms with varied terminations. Emeralds have been found in various parts of the world; but the most abundant supply, and the finest stones, are from Peru and Chili; they were known to the ancients, being found scantily in the mountains bordering on the Nile (where the old mines may still be traced), independent of the green corundum,—which was mentioned above as having been called Oriental emerald, but which is inferior in colour. There are many beautiful gems—both in intaglio and cameo—of engraved emerald, and there are many gems engraved in an emerald-green stone plasma (see page 41) called root of emerald (in French, *prime d'émeraude*) from its colour, but it is totally different in composition, being flinty.

Beryl, or Aquamarine, is of the same mineral nature and composition as emerald, but deficient in colour, from its containing little or no chrome, which may be the reason that it is slightly harder. Its colour is bluish, or sea-green, whence its second name (aquamarine); it is set in low-priced jewelry, with a green foil behind it, so as to counterfeit emerald. It is found in immensely larger crystals than emerald, but of the same shape, and has been much used for gems, especially large intaglios, which show their engraving well when held against the light.

Chrysoberyl resembles the last in many respects, but has more of a yellowish-green tint; and another beautiful stone which resembles it, called

Chrysolite, is often confounded with it, but differs in composition, containing magnesian earth instead of clay, which renders it less hard than the others: on this account its polish soon wears off, and it is unfit for gem-engraving.

Jade is an amorphous stone, never found crystallised. It is well known, though not as a material of gems, as its colour is but a dull green, or cream-white; and it does not take a high

polish, but it is worked into sword-handles by the Turks, and into uncouth idols, grotesque figures, &c., by the Chinese and South-Sea Islanders, who also make it into hatchets and implements,—whence it has the name of axe-stone. It is harder than flint, and tough.

Amazon Stone is of a pale green, and was used by the Assyrians for cylinders; it is of a flinty nature, being a kind of felspar.

Chrysoprase is another green stone, composed almost entirely of flint—in fact, a kind of chalcedony; it is not transparent, but translucent, of an *apple*-green colour, which is produced by the metal nickel.

Jasper is the name given to flinty, *opaque* stones, of various decided colours,—red, green, yellow, &c.; or these colours in opaque stripes, or veins; and when in even parallel stripes, called ribbon-jasper. Red jasper is in various shades, from vermilion to maroon, and has been much used and esteemed for gems in all ages, the brightest red being preferred; a black (black iron ore?) has been also used.

Bloodstone is a green, flinty stone (chalcedony); well known on account of the blood-red spots; it is used for seal-stones and intaglios, and occasionally has been cut into a bas-relief head of Christ with the crown of thorns, having the appearance of spots of blood on the countenance. This stone is denominated heliotrope by mineralogists, and is of various degrees of translucency. The common bloodstone looks opaque, like jasper; and when there are pieces without red spots, it is called green jasper; but the darkest-looking, when held to the light, will be found to be somewhat translucent, especially at a broken edge. Some of this heliotrope is quite translucent, almost transparent, with ramifying green, or brown, or red veins,—it is then called moss-agate; and in the same lump it shades off from nearly opaque green bloodstone to nearly transparent colourless chalcedony. Sometimes the bloodstone is

very transparent, and when held to the light, or over any thing white, bright green; this kind sometimes has the blood-spots also; and these red spots, and also red streaks, are sometimes visible in the moss-agate. Sometimes in a vein of heliotrope, the red, instead of being in spots, will be in a streak, or vein, looking like red jasper, an inch or two wide, or more; and sometimes there is a thin vein of red only, or streaked with yellow, of a dirty colour, but still part of the very same mass, of which one portion is ordinary green bloodstone with spots. The bloodstone is sometimes traversed by thin veins of white quartz, so that it can be cut into onyxes, as (42).

Plasma is a gem stone about which there has been much discussion; it is flinty, *translucent*, of various shades of dull emerald or grass-green; it is seldom free from spots, either black dots, consisting of pyrites, or pale patches produced by porous places within the stone. Its habitat is obscure, as we meet with it only as found in the ruins in Rome or in antique gems, of which there exist a great number (as it was a favourite stone with the ancients), and these are amongst the most reliable antiques that we possess.—(See page 39.)

There are some very pretty agate pebbles used for jewelry ornaments, called Mocha stones; these are pale, translucent or semi-transparent chalcedony, with an appearance within their substance like leaves of moss or lycopodium, and supposed to be petrified vegetables; but these dentritic marks are merely precipitation or sediment of manganese or other metallic mineral.

Garnet approaches to beryl as to hardness, but its composition is clay, flint, and oxide of iron, in nearly equal parts; and it is to the large proportion of oxide of iron that it owes its brownish-red colour; its crystals are rhomboidal, twelve-sided. Garnets are commonly found in mica-slate rocks, in almost every part of the world. When fine, and cut *en cabochon* (oblong and raised like a section of a plumb), they are called

carbuncles; and when of a purple or red-wine tint, almandine garnets; they are much used in jewelry, but not much for engraving, being of splintery, bad grain under the tool.

Jacynth, or Hyacinth, much resembles garnet as to hardness and appearance, but is lighter in colour, more of a sunny-brown tint; it is very different in composition, consisting of about 70 per cent. of a peculiar metallic mineral called zircon, 30 per cent. of flint, and a very little iron; it crystallises in four-sided prisms, with regular terminations. It is used in jewelry, but is seldom engraved by modern artists. There are a few fine antique, or cinquecento intaglios of it.

Moonstone is semi-transparent, white, or very light-coloured; it takes a high polish, and has in it a pleasing play of light (chatoyant) like Labrador spar, which it resembles in its nature, being a kind of felspar, composed chiefly of clay and flint, and about as hard as garnet, as it scratches glass. It is used for jewelry, but never for gems.

Cat's-eye is a stone of a similar composition and appearance, but darker-coloured, with a chatoyant play of light, which is always in a line; whereas the light of the moonstone is diffused. It is used for jewelry, but not for engraved gems.

Opal is a well-known, white, semi-transparent stone, with a greater or less play of internal, beautiful, shining tints, of red, green, and yellow light, as the stone is turned in various directions. It is not so hard as any of the preceding jewels, although it scratches glass; it consists of flint, combined with about 10 per cent. of water, and no clay. Though harder than glass, it is so brittle that it is difficult to set it safely in jewelry, and it is very liable to be broken; which is a great disadvantage, as it is a high-priced jewel, and was sold at an enormous price in the time of the Roman Empire. It is quite unfit for gem-engraving. Real, or precious opal is found in Hungary and various parts of the Old and New World;

and there is, besides, an exquisitely beautiful kind, brought from Mexico; but when exposed to wet, or even damp, it loses all its brilliancy and colour, which may be restored by carefully warming and drying it; but if this be often repeated, it by degrees turns yellow and loses its lustre. This kind of opal gave foundation to the episode of the Baroness Hermione of Arnheim, in Sir Walter Scott's novel of *Anne of Geierstein*. These beautiful red, green, and other prismatic tints do not exist in the substance of the stone, but are produced by the polarising and refracting effect of its laminæ upon the light. The moisture penetrating the stone (which it cannot do in the real opal) renders it homogeneous, by filling the interstices between the laminæ, and thus preventing refraction or diffraction.

Turquoise, which is much esteemed as a jewel, is sky-blue and opaque. It has been imitated by staining bone with copper; and some fossil bones having been found so stained by nature, it has been thought by some persons that real turquoises were fossil *bone* coloured by copper; but they are of a *mineral* nature; for besides containing lime and phosphorus, which exist in bone, they have in their composition clay and flint also, which are not in bone. They are found in various kinds of rocks and alluvial soils, in Asia and Africa. Those brought from Mount Sinai are imbedded in a matrix of sandy conglomerate, resembling the *cascalhao* in which diamonds are found in Brazil.

Lapis-lazuli is a beautiful jaspidean, opaque stone, varying in shades from sky to dark blue; brought from various parts of Asia; used in jewelry, and sometimes engraved as a seal-stone. It has usually specks of yellow or white iron pyrites, by some thought to be gold or silver; it is very hard, consisting of clay, flint, lime, sodium, iron, and sulphur; it is the substance from which the fine blue colour for painting, called

ultramarine, is made, by grinding it into powder and purifying it from pyrites and other substances, which are mixed with it naturally. This paint is now difficult to obtain genuine, since the mode of making it artificially has been discovered by chemical analysis. The artificial ultramarine is very beautiful, and is sold for eight or ten shillings a pound; whereas, a pound of fine, real ultramarine would cost from eighty to a hundred pounds sterling and upwards. The artificial ultramarine cannot be distinguished from the real by the most careful chemical tests, though it may by the microscope, as the real ultramarine shows the sparkling particles of the broken stone, the artificial being a dull powder.

Amethyst is the least hard of what are called jewels; it is rock-crystal—that is, *crystallised flint*—tinted of various shades of violet; which colour is produced by iron and manganese. It is not much esteemed in jewelry, on account of not showing its colour by candlelight, though it was much used by the ancient gem-engravers. Colourless rock-crystal has seldom been used for gems except at one period—the cinquecento—when some very large front-face intaglio portraits were cut in it, and a dog's head—to represent the dog-star Sirius—which looks very well and distinct when held up to the light (92). Yellow rock-crystal—which is coloured by iron—resembles topaz, and is called *Cairngorm*, from the place in Scotland where it was first discovered. It is now obtained abundantly in Brazil, as also a brown kind; but they are found also in various places, especially in Spain,—whereof the finest kind—of a dark-yellowish brown—when heated to a degree that would char wood, becomes lighter coloured, and assumes a fine orange tint, approaching to jacynth, and is a beautiful material for engraving gems.

Flint, Silex, or Silica—which is abundant all over the world, in the form of white *quartz-rocks*, and also as an ingredient of

granite, of trap-rocks, sand-stone, and other mountain masses—is not like carbon (diamond), which, according to our present knowledge, is a *simple* substance, but, like clay (sapphire), is *compounded*, of *oxygen* and *silicon*,—a simple substance; and this flint, or silica, is combined always with a little water in its natural state,—for it falls into white dust when artificially deprived of all water. It is still undecided whether or not silicon (or (silicum) is to be considered a metal; it is capable of forming a compound with copper, platinum, or iron, whether that compound be denominated an amalgam, or alloy—that is, mixed metal—or not. Diamond (carbon) has never yet been considered metallic, though it unites with iron, forming the well-known fusible compounds steel and cast-iron, which might be called amalgams. Malleable wrought-iron, if quite pure and free from carbon, cannot be melted (fused), like gold, in a crucible; wrought-iron, when welded, is apparently brought to a state approaching fusion, to make it unite; but then there is carbon in the forge-fire, which unites with its surface. It may possibly be discovered hereafter that diamond is an oxide of a metal (to be named carbonium), united with a certain proportion of water of crystallisation, as it has been proved that sapphire is an oxide of aluminium.

We see that—like *carbon* (diamond) and *clay* (corundum)—*flint* is sometimes crystallised and transparent: either pure white, as quartz; or colourless, as rock-crystal; or of various colours, as amethyst or cairngorm, yellow and brown; at other times, amorphous,—that is, in masses without any definite angular shape, and not transparent,—for instance, the common flint-stones; and there is a great variety of appearances which it assumes besides, as agates, jaspers, and carnelians, and the beautiful opal. We have considered *charcoal* (carbon or diamond), and *clay* (sapphire), with respect to their universal diffusion, utility, and beauty; and *flint* (silica) is equally

abundant, useful, and highly ornamental. The apparent exceptions are so trifling, that it may be said that all *sand* is flint; it is as universally a constituent of earthy soils as clay and lime, and is especially useful in loosening these soils, which would be too stiff for vegetation if they consisted entirely or chiefly of clay. Sand, again, is one of the necessary ingredients of mortar and cement in all our buildings and public works, and is the constituent of the sand-rocks which afford materials for our buildings, and stones for every purpose of grinding. Fine sand is used in making glass, and for other economic purposes; and flint — in the state of fine white powder, like pipe-clay (called by the Chinese *caolin*), which is found at Carclaes, in Cornwall, and various parts of the world —is used as the chief ingredient in *fine* porcelain.

It is only pure *crystallised* flint which is *transparent*, like rock-crystal or amethyst; all *uncrystallised*, or *amorphous*, flints are only more or less *translucent;* for example, the flints from the chalk strata, of which gun-flints are made, and those with which the roads are mended, and also chalcedony.

Chalcedony, which is the *material of most gem-stones*, is a pure amorphous flint, like gun-flint; both being the same substance as rock-crystal, it is only translucent, not having attained crystallisation, which would have rendered it transparent: as may be seen by the transparent crystals on the interior surface of hollow flints, or chalcedony, into which they gradually pass without line of demarcation; and also wherever there are hollows in the chalcedony, or flint-stones, they are lined with crystals (94 and 95), continuous with the substance of the stones. This amorphous flint, or chalcedony, is the constituent of almost all the stones used by gem-engravers, under the names of carnelian, sard, sardonyx, onyx, chrysoprase, bloodstone, jasper, agate, &c., all of which are modifications of chalcedony (uncrystallised flint), which in its pure, simple

state is found in all parts of the world, translucent and of various colours,—dark brown, reddish or yellowish brown, or bluish, or nearly white, or white, which last, when polished, is known as white carnelian: the bluish-white chalcedony is much esteemed by engravers.

Quartz-rock is usually more or less charged with metals, and forms the rocky veins, or "lodes," in which they are found, as in Cornwall and all parts of the world. Quartz-rock is crystalline throughout, and exists in veins of all dimensions, from a line to hundreds of feet in thickness, as the beds in which metals are found, and parts of which are crushed by machinery to obtain gold, &c. In some places the mass of quartz forms an entire mountain; as the sugar-loaf mountain in Ireland, in the county of Wicklow, which is one mass of crystallised quartz, pure white, though not transparent like rock-crystal, being wavy in its structure, which refracts the light and makes it white as snow. In high mountains, where the above-mentioned rocks abound, masses of them fall from the precipices and are broken into fragments, which are still further worn down into gravel and shingle in the rivers into which they have fallen. It is thus that the precious metals and stones were broken out of them, and were discovered at the bottom and sides of the streams in dry weather; at first by accident, and subsequently by being searched for. In this manner gold, jewels, and gem-stones are afforded by the rivers of the Andes and California in America, the Nile in Africa, and in Asia by the Indus, and the rivers of the Himalaya mountains, and at the celebrated diamond-mines of Golconda, to the north of Madras, in rivers running from the Gauts. In these places the rivers have to be diverted from their course, so that the sand and gravel may be searched; but it is well known that rivers sometimes change their courses spontaneously, leaving the old channels dry; in

which state they remain for ages, with sometimes an accumulation of soil to a great depth above the gravel; and these soil-covered beds of rivers afford the chief "gold-diggings" discovered in Australia, and diamond-diggings at the Cape of Good Hope.

From beds of rivers, which have brought them down from high mountains, are obtained the large rounded lumps of rock-crystal (crystallised quartz), which have had all the angles of the crystals worn off, and are used by opticians to make lenses, called "*pebbles;*" and also the round masses, of various sizes, of *chalcedony*, which is the material of the beautiful agates, onyxes, sardonyxes, and carnelians, worked by the lapidary and gem-engraver.

Lumps of chalcedony, when hollow, are called GEODES (94 and 95), and their formation is analogous to the process which we see going on in the petrifying lime-springs of Derbyshire and elsewhere: for *flint*, though so hard, dissolves in water of springs charged with carbonic acid, and is again deposited in a solid state in stalactites and stalagmites, in cavities, in amygdaloid, trap, and other rocks, which they fill with *nodules* of flint or chalcedony. When the cavities are larger, they fill them with *geodes;* the flinty deposit solidifies first at the circumference, lining the cavity, and then gradually depositing chalcedony in successive *layers* towards the centre; and as solidification becomes slower, the *particles have time to arrange themselves in a definite form;* and we find in general the inner surface of geodes beautifully lined with crystals (94, 95, and woodcut).

Another thing to be remarked is, that some of the layers from which onyxes are cut are of a fine white; the cause of which is, that the solidification of the mass does not go on at a uniform rate. When it is quicker, the layer is uncrystallised amorphous chalcedony, of whatever tint it may be, which,

when broken, shows that granular surface which evinces its being porous; the next layer is white, because it is crystallised and not porous, having solidified more *slowly*. This crystalline structure may sometimes be seen satisfactorily by examining the white layer of uncut onyx stone, or of an onyx (which has been broken across), with a powerful magnifying lens; the white layer will be found to consist of minute, parallel, compacted, shining crystals; which, had they been on a sur-

face instead of being between two layers, would have formed transparent pointed crystals of a larger size. These minute crystals in the white layer are individually transparent, or translucent, though in the aggregate they exhibit either an opaque or translucent white, by refracting and reflecting the light; as snow or a mass of hailstones is white, though each individual hailstone, or particle of snow, examined separately, is as transparent as ice or crystal. The crystalline structure

is sometimes visible to the naked eye; when, for instance, a mass of chalcedony is found with a layer crystallised so coarsely that, though the crystals are parallel, like those in the natural white layers, they are individually so much larger as to transmit the light freely, and with so little refraction or reflection that the layer itself is not white but translucent.

Many onyxes, being cut from curved layers of geodes or other forms of chalcedony, have their strata slightly bent; which, however, is counteracted by the skill of the artist in cutting a cameo, even when they are much curved; of which (96) is a strong example, (97) representing the curvature of the layers of the onyx, looking at the cameo sideways.

In some instances, a section of a whole geode, or mass with concentric layers, shaped like an ostrich-egg or a cocoa-nut—as (94) before it was split (or figure, page 49), has been converted into a vase, or cup, and the outer white layer engraved, forming a chalcedony-onyx cup, or vase, with cameo bas-relief subjects carved thereon, equivalent to (5),* the Portland vase. Specimens and fragments of these vases may be seen in the Louvre in Paris, and in the Grüne Gewölbe at Dresden, as also in the museums of Naples, the Vatican, and elsewhere. The author possesses a cup of this kind, which he had made from a large chalcedony-onyx stalactite, resembling (99), $4\frac{1}{2}$ inches wide by 5 high;† nearly the

* The celebrated Portland Vase had belonged to the Barberini family, in Rome, and was purchased there by the Duchess of Portland, in the last century, and named after her; it was sold with the rest of her collection in 1786, and bought for the Duke of Marlborough, from whom it passed to the British Museum. It is similar in design to those chalcedony vases just described, but is made of glass, blown in two layers, in imitation of onyx; the outer white, the inner dark blue; and the artist engraved the figures in cameo in the white, cutting down to the blue, so that it forms the ground.

† See Vase 183, Index.

dimensions of the celebrated cup, or vase, of St. Denis, in the Paris Cabinet: which vase is a great curiosity, but not fine either as to design or workmanship.

The Tazza Farnese, in the Neapolitan Museum, is much superior; it is not a vase, but a very flat bowl, or patera, like a soup-plate or saucer, 8 inches across, made of a stalagmitic onyx; the engraving being on the bottom of the vessel,—an Egyptian subject, but Italian engraving.

There is another beautiful kind of onyx, which has been introduced lately for ornaments—black, or brown, and white, in concentric circles (98)—not known to the ancients,—at least, no vestige of such has reached us from them. These concentric circles are not produced by shaping the flat parallel strata, like (80), but are the concentric layers of chalcedony stalactites above mentioned, cut across (99), and are of various sizes, from an inch diameter to four or five. Almost the first of these, and perhaps the finest ever seen—3 inches in diameter (with white and dark-brown Oriental sardonyx tints), set at the top of an elaborately executed and jewelled solid gold tripod—was exhibited by Phillips of Cockspur Street, in the Exhibition of 1862.

Sometimes the mass of the geode, or stalagmite, during its formation having rested on a flat surface, or solidified first at the bottom instead of all round, the layers of the bottom part, instead of being curved, are flat and parallel, like (95), which is 8 inches wide; as seen in onyxes of various sizes, some of them very large. There are also onyxes with quite flat strata, measuring from eight to twelve inches or more across; such as those on which the cameos (104) and (105) are engraved.

(104), The triumphal crowning of Augustus, after the victory obtained by Drusus (his horoscope, the Capricorn, figured at the top), in chalcedonyx (9 inches by $7\frac{1}{2}$), has the appearance of cinquecento work.—(*Vienna Museum.*) (105), Tiberius and

Livia receiving Germanicus on his triumphant return, with captives in the foreground; and in the background an entirely different subject, representing the apotheosis of Augustus (thus having two compositions in the same picture, like the celebrated Transfiguration of Raphael.) This is a cameo, on agate-onyx of several strata (13 inches by 11).—(*Paris Museum.*)

The Vienna gem is by far the best, both as to the workmanship and the quality of the onyx, which is quite flat, a chalcedony onyx, with a pure white layer. But the Paris gem is of inferior engraving; in many places the bas relief is scarcely rounded, the legs of Germanicus are quite flat, and the engraving has apparently been executed by the diamond-point. The stone is not a true onyx in layers, but an agate variegated in stripes, and is, in fact, sometimes very properly designated "the *agate* of Tiberius." There is, however, another more enormous cameo in the Roman Museum, nearly a foot and a half long; this likewise is rather an agate, with varied layers, than an onyx; the veins, as in the last instance, being skilfully adapted. The engraving is very peculiar, being scarcely in relief; the subject is Bacchic, though not Bacchanalian; the drawing very good; but the whole looking somewhat like some of the Egyptian or Assyrian bas reliefs, the subject being expressed rather by the sunken lines than by any elevation of surface, as seen in the subjects on the Egyptian obelisks. Most likely this was engraved by the diamond-point. There are, however, slabs of real onyx-stone, 18 inches long and proportionally wide, perfectly flat. The author saw lately two onyxes, each seven or eight inches across, cut from one slab, with three layers as flat and straight as the leaves of a book; and is grieved to relate further that one of them was desecrated by being engraved into a kind of nicolo clock-dial instead of a cameo! Such large flat stones, however, are comparatively scarce.

If the cavity occurs in conglomerate or other rock, which forms an irregular-shaped mould, the agate mass deposited must necessarily take an irregular form; and when cut and polished—the layers being parallel to the sides of the polygonal mass, as (106), from a lump 10 inches thick—the name of "fortification agate" has been given, from the fancied resemblance to the trenches of a castle or military intrenchment. When the layers of these masses have suitable colours and thickness, they are cut into onyxes.

In Iceland, Cornwall, &c., we find that the flint has been deposited from springs, in stalactites, or stalagmitic layers. Some specimens of stalagmitic chalcedony from Iceland are surmounted by the purest crystals; and some of the layers are *cachalong*,—a brilliantly white, nearly opaque, semi-opaline substance; which, though apparently calculated to make onyxes, is very disappointing to the gem-engraver, being, like opal, too brittle for engraving.

Geodes are of various forms and sizes, usually roundish, from two inches to two feet or more in diameter,—as may be seen in the British and other museums; some of them with a very thin wall, not more than a quarter of an inch thick; some an inch, or two, or three, or more. After the first solidification at the circumference,* the petrifying water continues to be admitted, until sometimes there is no more water; in which case the aperture remains open (94); but generally the aperture becomes hermetically sealed by the deposition of flint, as may occasionally be seen by a depression on the outside of the geode, which marks the spot where the orifice admitted the water; and occasionally some water is left in the interior, so

* Some nodules and geodes, however, have all the appearance of being coeval with the mother-rock; a portion of pure flint, included in the compound rock, when both were ejected together in the state of igneous fusion. But this subject is too abstruse to be discussed here.

that as much as a pint of water or more has been found in some of them. There is a beautiful little specimen of this nature in the British Museum—presented by W. G. Lettsom, Esq. — of pale, nearly transparent chalcedony, not larger than a hen's egg, somewhat flattened, half full of water (107).

What has been here stated will account for an appearance hitherto, so far as the author knows, unexplained; that is, a drop of water sometimes existing within rock-crystal. It has been just shown that quartz (rock) crystals are stalagmitic in their nature, and during their formation, however rarely it happens, water is surrounded and arrested within them just as in the geodes above described.

Precious stones become exposed independently of the agency of rivers; for many of the trap and conglomerate rocks, though hard under the hammer, are very susceptible to the action of the weather, and in time they decompose and crumble into earthy matter, so as to supply soil for cultivation, and thus allow the flinty nodules and lumps to escape on dry land. In this way chalcedony lumps and nodules are found, besides those which are taken from rivers, both in the Old World and in Brazil, and also in the neighbourhood of Oberstein in Germany, the great emporium of agates.

Oberstein became the head and source of the agate trade from its geological position; for, in consequence of the decomposing nature of its rocks containing agates, they were found there in an abundance unequalled elsewhere. The principal rocks there are in three strata; the uppermost bed a flinty conglomerate, composed of water-worn gravel, of quartz, porphyritic, and other trap-stones, worn into pebbles, and united by ferruginous earthy matter, and much burned by the second stratum, the trap-rock below it, which forced it out of its level to an inclination of nearly forty degrees:

it also contains veins of chalcedony flint. At the junction of these two beds of rocks, in the hill facing the village of Oberstein, there is a cavern—originally partly formed by the gradual decay of the stone, and partly excavated—so large that it forms the village church, by building a wall for the front, with doors and windows, the cavern constituting most of the remainder: (166), from an oil painting, which shows the geological features of this place.*

This rock, which lies under the conglomerate, a dark-brown amygdaloid trap (with an infiltration in some parts of crystallised carbonate of lime), varying in colour from olive to brown, more or less porphyritic, and passing into greenstone, extends about two miles along the side of the river, with here and there some patches of trap tuff, as far as the village of Idar, where the third kind of rock begins, and forms a considerable hill (Galgenberg), which is the depository of the chalcedony, in nodules and masses, which has rendered the district celebrated. This rock is a more basaltic-looking trap, darker and denser at the lower part of the bed, and less hard and lighter coloured in the upper parts, containing nodules and geodes of chalcedony-agates. At the top of the Galgenberg hill there is a precipice, from which, as the rocks have become softened and cracked by weather, they have fallen and broken in pieces, from time to time, for ages,—in consequence of which the nodules of chalcedony were released and mixed with the soil—as they are also in Brazil—and became spread about, as we see flint and other stones spread about in tilled land. There are besides several places in the districts, three or four miles apart, which yield agates of various qualities; some of them nodules and

* Painted by Caroline Billing, *née* Hamilton; an amateur landscape-painter, and a consummate connoisseur of gems which are worth looking at.

geodes, but also some stalagmitic. About the beginning of this century it was discovered that these lumps of stone were agates, adapted for brooches and other ornaments, and also that some of them were fit to make onyxes, valuable at Rome and wherever cameos are engraved; more especially from the failure of supply of Oriental stones. Later, the method was discovered of altering and improving their colours, so as to convert them into carnelians and onyxes, similar to those imported from India. The locality was especially favourable; as the little river, which flows at the foot of the hill, afforded water-power to work the mills for cutting and polishing at a trifling expense. The grinding-stones—brought from Kaiserslautern, near Mannheim—are about six feet in diameter, consisting of a sandstone grit, which rasps down the agates and onyxes with astonishing rapidity. Hence arose a flourishing trade, which still continues, but, strange to say, not with the stones with which it commenced. The agates—which were found at first on or near the surface in abundance—were exhausted, and the process of mining into the rock is too expensive. Fortunately it was discovered that chalcedony stones of the same quality are abundant in Brazil, and the mills of Oberstein have been for some time chiefly supplied from that country; but the supply from Brazil is not nearly so abundant as it was a few years ago.

It has been explained, at page 49, that the *white* layers of the geodes (and other chalcedonic masses), from which onyxes are made, are either crystallised or crystalline quartz, and, therefore, impenetrable to water or liquids; whilst the other layers are amorphous, porous, and permeable by liquids: this is the reason that these latter are sometimes found coloured by natural processes, and that they can also be stained by art. Rock-crystals are sometimes apparently stained; but this is a deception effected by making them red-hot, and then

plunging them into water tinged by cochineal or indigo, which fills them with cracks, into which the red or blue liquid penetrates, causing them to appear coloured; but it will be seen, on close inspection, that the substance of the crystal remains perfectly colourless between the cracks. On the contrary, amorphous gray chalcedony, when it happens to remain for some time in the water of springs or streams containing iron, imbibes the fluid, and becomes impregnated with the oxide of iron, which turns yellow, orange, or brown, when exposed to the air and sunlight; in fact, what might be called "iron-moulded." In this way—besides those stones formed originally with an admixture of iron in them—stones called SARDS were produced; but these are sometimes dark, when the stone was dark originally. The East Indians burn *brown* stones of this kind to make *carnelian;* as by the heat the brown oxide of iron in the stone, deposited from the water, is changed to a bright red. The Germans make carnelian, in the same way, by heating *brown Brazilian* stones; and according to the quantity of iron contained, and the degree of translucency of the stone, the carnelian produced is of a paler or deeper hue; when very translucent, and at the same time dark red (like a morella cherry), it also is called sard; so that there are yellow, orange, brown, and dark-red sards.

Other stones also are improved in appearance by being heated—fluor-spar, topazes, and cairngorm, as above mentioned: the heat acting on the metals contained in them.

The lapidaries of Oberstein have imitated these two processes of nature and art. To make carnelian, they first steep the colourless or gray chalcedony in a solution of iron, and then heat it to turn it red. In this process chemistry enables them to introduce as much iron into the stone in a few days or weeks as would have been effected in the lapse

of ages, in the natural way, by the small quantity of iron which exists in rivers or common land-springs.

The preparation of *iron* employed for staining is a solution of the *pernitrate*, which may be made by dissolving two ounces of iron wire in a pint of a mixture of pure nitric acid and water, in the proportion of one of acid to three of water. The workmen make it, in a rough way, by putting a handful of old nails into half a pint of "single aquafortis" (impure nitric acid) mixed with a pint of water. In fact, the process requires little accuracy, for the stones take the colour, not so much in proportion to the strength of the solution, as to their own porosity; those that are most translucent (as approaching to crystalline, and closer grained) require the longest time—from five to twenty days, or more—and some that are very transparent admit no colouring matter at all, as may be seen in the paler or transparent streaks of the stones—such as (100)—both those coloured by nature and by art; whereas those stones which are very porous, and nearly opaque, become like jasper when heated.

Even after the stones have been soaked a sufficient time for colouring in the iron solution, they are not altered in appearance, as they contain merely the clear solution of pernitrate of iron; this is, however, decomposed by applying heat; and the red peroxide is precipitated within the stone, which is thereby coloured red. This may be done in a few minutes, by placing the stone on a hot iron plate, when the change to red takes place under the eye; but there is some risk of cracking the stone by doing it so suddenly. The workmen use an oven, or iron vessel, the heat being gradually increased for some days,—by which the stones are thoroughly dried. Then the heat is raised sufficiently to blacken, or char, a piece of wood or paper, and the stones turn red; a heat much beyond this would spoil the texture and colour of the

stones, by calcining them. The Indians, when they heat the natural brown stones to make them into red carnelian, enclose them in a mass of clay, mixed with camels' or cows' dung, before they put them into the fire, to prevent their getting red-hot: a crucible with sand answers the same purpose.

The *brown* Brazilian chalcedony, like the East Indian, is *reddened* by merely heating in the oven. When a *fine* carnelian is cut and shaped ready for a seal, no person can distinguish whether it be East Indian, Brazilian, or from Oberstein, because each is chalcedony, coloured by peroxide of iron; though some persons flatter themselves that they can tell the difference. It is easy to know Indian stones when imported, because they are all so badly shaped that they must be recut for the engraver's or jeweller's use (and this explains the awkward cutting of the stones of many *real* antiques which are on Indian stones); but when thus recut, no person can distinguish them from the fine Brazilian and German carnelians. The Oriental and Brazilian sardonyxes and sards are identical, and, however rich in colour, would be spoiled by artificial heat; that is, the orange-brown sard would be turned into red carnelian.

It has already been explained (page 10) that *onyx* is the name given to chalcedony stone, of *whatever* colour, which happens to have a layer of opaque or translucent white in it, or on its surface, and in which white the gem-engraver can sculpture a subject in bas relief, the other shade of chalcedony forming the ground. When the chalcedony is too pale, it can generally be stained, so as to make a sardonyx or carnelian onyx.

We have now to discuss the method of producing dark-brown sardonyx, or black or blue onyx. Almost all gem-stones require to be held against the light, in order to estimate their

tints. Sometimes chalcedony is too close-grained or crystalline—as mentioned before—to admit a stain : in which case the onyx has a translucent, or nearly transparent, ground ; which still is very effective, if the sculpture be good, and has been frequently used for cameos, as (6 and 36) ; the tables of which are translucent and nearly colourless : but even glass or rock-crystal shows dark shades when photographed. See (92).

The method of staining brown, or black, is the same in all cases, and is similar to the other ; that is, introducing a colourless material, in a *clear* liquid state of solution, into the stone, which can afterwards be turned black or brown within it ; no *coloured* vegetable matter can penetrate the chalcedony, nor any *coloured* fluid—such as common black ink or infusions of prussian-blue, &c.—sufficiently to cause a perceptible change in its colour.

It is well known that sulphuric acid chars, or burns black, all organic substances, animal or vegetable ; such as wood, skin, or other material containing carbon. Now, oil and sugar contain carbon ; and if the chalcedony be steeped in oil or syrup for some time, it penetrates through the pores ; after which the stone is boiled in sulphuric acid, which penetrates also, and turns the oil or sugar to a light or dark brown, or black, according to the quantity that has penetrated, which is in proportion to the more or less porous nature of the stone, or parts of the stone, as seen in the gradations of the same onyx (100) ; and thus we see, in many onyxes of three strata, one side much darker—being more porous—than the other ; and this is especially to be noticed in some of the Oriental sardonyx beads used for necklaces (101). The Orientals were acquainted with the art of staining the onyx before the Christian era ; they had neither sugar nor sulphuric acid ; but though they had no sugar, they had honey—which is the syrup provided by Nature—and they also had oil ; and though they had not

sulphuric acid, they had fire, to burn the sugar or oil within the stones; which, however, is much more apt to crack them than the sulphuric acid, as may be seen in many of the Oriental beads. Having inferred that this must have been their mode of proceeding, the author (although this method had never been attempted by European lapidaries) put it to the proof, by using the heat of fire instead of sulphuric acid, and with entire success both with oil and honey; first steeping and then heating them. Doubtless the Indians and Burmese have traditionally handed down the process to the present day, but are not communicative on the subject, any more than the lapidaries of Pliny's time; who told him that honey, especially "Corsican honey, improved the onyxes, and that the Arabians boiled them in honey for seven days and nights" (lib. xxxvii. cap. lxxxiv.), but did not let him into the secret of burning them afterwards. A gentleman wrote lately to Calcutta for an account of the mode of staining the onyx beads, and received in answer a very precise direction as to boiling the stones for twenty-one days in olive oil, but not a word about either fire or sulphuric acid, though the stones might be boiled in oil for twenty-one years without altering their appearance. Soaking in oil, cold or hot, will darken the porous layers of some agates, but not blacken them like the Indian beads.

A strong prejudice exists in favour of the black, or brown, and white *Oriental* onyxes, whether for gems or beads, upon the supposition that they are not stained by art, but are in their natural state; this is generally believed by the jewellers and lapidaries, and a great many circumstances tend to confirm the error, which can be corrected only by that knowledge of chemistry which they do not possess; besides, they are ignorant of the method used by the Orientals of staining black and brown.

When the black and brown produced by sulphuric acid is

too dark, it can be "drawn," *i.e.* withdrawn, made lighter by nitric acid, which re-dissolves the dark matter produced by the sulphuric acid; which dark matter is not pure carbon, like charcoal, from wood burned by fire, but a kind of "humus," or slag: this can be faded entirely, or reduced to a slightly yellowish tint, by nitric acid, which has not so much power on the charcoal produced by fire in the Oriental beads as it has on the dark material formed in the German beads by sulphuric acid. The black produced by fire in the Oriental onyxes is sometimes real charcoal, which, like a bit of common charcoal put into nitric acid, is not immediately altered by it; hence the lapidaries, finding that they cannot "draw" the black from Oriental onyx in a few *hours*, as they do from German stained onyx, think that the stone was *originally black by nature;* this, however, is a mistake, owing to their not having allowed sufficient time. The best-authenticated genuine Oriental beads may be deprived of the black and brown by nitric acid in the course of fourteen *days*, more or less; and a bit of charcoal soaked along with them becomes completely bleached and changed into a pale flocculent residuum, the black carbon being converted into carbonic gas by the oxygen of the nitric acid. There is no perfect black in any flint-stone in its natural state (like the very black-stained onyxes); for the *darkest*-looking translucent *natural* stone will be found of only a very dark smoky *blue*, or *brown*, like what are called black gun-flints, and very rare specimens of Brazilian or Oriental onyx chalcedony, in both of which the colour will be found to fade off in some parts to pale brown or blue gray. Bits of black, opaque iron ore have been shaped, and cut in intaglio, by the earlier engravers.—(See page 6.)

If the stone which has been thus made paler be again subjected to a strong heat, the vegetable matter remaining in it may again be burned black, like the Oriental stones, which

LOT
Nº 160

SALE 169

THE BCD LIBRARY
PART I

February 17, 2024

Kolbe & Fanning
Numismatic Booksellers
numislit.com

Tel: (614) 414-0855
Fax: (614) 414-0860

orders@numislit.com

141 W. Johnstown Road
Gahanna, OH 43230-2700

black will now resist nitric acid as much as they do. The Oriental onyx beads which yield most slowly to the nitric acid are, in general, those which have little cracks in the white layer, showing that they had been subjected to a stronger heat, so as to produce a more perfect charcoal in them. Although the lapidaries have not yet discovered the means of imitating that natural orange, or yellowish brown, of Brazilian or Oriental sard, which is produced by the slow process of ages in depositing a sufficient quantity of the peroxide of iron, it has been done by the author, by using a *neutral* solution of pernitrate of iron, and keeping the stones in it, warm, for weeks instead of days, renewing the water of the solution from time to time as it evaporated.

Instead of withdrawing the depth of colour produced by honey and acid, the brown might be stained lightly in the first instance, but then it would be only superficial, which would not answer the purpose of gem-engraving; and the principal thing to know is, how to treat the stones when they are too dark. The "drawn" stones have often the exact iron-mould tint of the natural sardonyx, and of course of their imitations —those coloured by long soaking in neutral pernitrate of iron; which latter are much improved by exposure to a strong sunlight for some weeks. The solution of pernitrate of iron must not have excess of acidity, or it will not stain brown any more than the acid pernitrate of iron used for making carnelian, mentioned page 58.

In carrying out the various processes of staining described, considerable practice is required as to the degrees of heat to be applied, the length of time necessary for drying before the application of heat, the changing and rechanging from one solution to another—as in staining blue—and a variety of other *minutiæ* which are acquired by experience. As jewellers and dealers, who are constantly handling them, cannot always

distinguish between stones that are Oriental or Occidental (Brasilian), called German, what does it signify?—they are equally handsome, and both chalcedony. The stone being stained does not militate even against the antiquity of a gem, as it was shown above (page 61) that the onyx and sardonyx were stained in the time of Pliny; and the gem of gems, the Augustus of the Blacas Collection, is on an Oriental, apparently stained, stone.

There is a difficulty of ascertaining whether a stained sardonyx be Oriental or Occidental, but scarcely any in judging whether a sardonyx be stained or natural. For instance (as was mentioned at page 62), there is no natural *black* with sardonyx; the most beautiful brown of the natural stones has a tinge of red, which might be imitated (see page 63), though that has not yet been done by lapidaries; sometimes, however, the stone had a tinge of red before it was stained brown, which causes an Oriental tint not distinguishable. The natural sardonyx, when the brown has no tinge of red—as is the case with most of the Nile stones—is of a pure brown, different from the pleasing burnt-sugar brown of the stained sardonyx. It requires some practice to know which parts of an uncut stone will admit or resist these methods; and it is necessary to be aware, in making experiments, that the outside of a stone which has been long exposed to the weather will not be affected by the staining process; but when the surface has been ground off, the interior will receive the stain.

Chalcedony has been stained *blue*, by the author, on the same chemical principles as those which produce red; that is, introducing the peroxide of iron in solution into the stones in the same way, and then, instead of heating them to turn them red, precipitating the imbibed iron blue, by soaking them in a solution of ferrocyanide of potassium (*yellow* prussiate of potash)

in water, in the proportion of one scruple of the ferrocyanide to each ounce of water: in fact, making Prussian-blue in the pores of the stone. In staining blue, the effect is sooner produced by soaking the stones *first* in the solution of ferrocyanide of potassium, and then in the iron liquor. Blue can be produced also by *proto*sulphate of iron and ferr*id*cyanide of potassium (*red* prussiate of potash).

A green colour, resembling that of chrysoprase, has lately been imparted to pale, translucent chalcedony—as the author is informed—by soaking it in a saturated solution of nitrate of nickel; the nickel used being the common *unpurified* metal, as it is obtained from the ore, which always contains an alloy of cobalt, which improves the colour. This metal is to be dissolved in a mixture of one part pure nitric acid to three parts water, with heat, putting in, to insure saturation, more metal than can be dissolved. This solution is to be filtered and evaporated until crystals begin to appear. The stones must remain in the liquid for a long time, as the process is much slower than that for producing red, brown, or blue.

A variety of colours may be produced by such methods, but none of them are so effective or useful as the shades of carnelian, sard, and sardonyx brown deepening to black: the blue colour fades. *Yellow* is obtained by the action of hydrochloric acid on a stone faintly impregnated by nature with oxide of iron, as the resulting hydrochloride of iron produces a yellow tint, unlike the reddish brown of the peroxide or nitrate. There are very few stones which can be stained yellow, because the yellow produced is a pale lemon-colour, which will not show if the stone is not nearly transparent; and when it is nearly transparent, it is difficult to detect whether it has been imbued with iron enough to be changeable by the acid; but still a practised eye can estimate the quality of stone.

From what has been above described, it must be evident that there is no specific difference between sards and carnelians; they are all chalcedony, only varying in gradations and tints of colour,—yellow, orange, brown, and red. The carnelians of modern times, produced by fire, were not known to the ancients,—at least not to the archaic artists,—who used the stones in their natural state, as they were found in the beds of rivers or on the sea-shore; and they had no other name for them but sards—so called from Sardis, in Asia Minor. The Orientals, however, as early as the time of Pliny, had discovered the method of colouring stones red, black, and brown, thus improving the onyxes and sardonyxes; but even then the bright red sards were not called *carnelians*, because, in fact, that name did not then exist, being a *modern Italian* word, *carniola*, from the word *carne*, signifying "flesh;" nevertheless, yellow, and even white, stones are now called carnelians.

It is a very common question, What is the difference between carnelian and sard? as both names are now in common use. The distinction is doubtless very arbitrary. Nevertheless, we may say that carnelian has usually a vermilion tint, on account of the action of heat on the oxide of iron contained in it; and, on the other hand, the name of sard is not now given to a stone unless it be very *translucent*, which frequently is not the case with carnelians, even those of a fine colour. In fact, sard is an antique word, which, besides brown sard, implied fine transparent red, yellow, and orange stones, which are all now called carnelians, including the natural yellow sards, such as are still imported from India. But some carnelians are muddy, and not worthy of being classed with the sards,* which were

* The dealers and others make an interminable confusion of nomenclature with respect to onyx and sardonyx, but the solution is very

always selected of a nearly transparent quality by the ancient engravers, as the intaglios were held up to the light to see the subject (16, 17, and 142).

Until the beginning of this century, red sards and carnelians were made (as described already) by the East Indians only, from brown chalcedony nodules, like shingle, and none of them of any great size; but since the discovery of the mode of staining, slabs of pale-grey, translucent chalcedony have been made into carnelian; so that what was never anticipated thirty or forty years ago is now common,—such as a paper-knife, nine or ten inches long, of red carnelian; and a carnelian seal-stone for an intaglio could now be made larger than a man's hand. An ancient gem-engraver would have been in ecstasies of astonishment and delight if he could have beheld such sards, onyxes, and sardonyxes as are produced at the present period, to the surprise even of engravers who began their career at the early part of this century; as the

simple: it has been erroneously asserted that onyx means a stone of two strata, sardonyx of three or more; but this has been already explained at page 10. The terms have not the slightest reference to the number of strata. Onyx means merely the superposition of at least one stratum over another; one being white, and the other pale, translucent, or red, or black, or brown, or any other colour; but if that other colour be sard, it constitutes a *sard*-onyx (sardonyx: *candor* in *sarda;* Pliny, lib. xxxvii.); and there may be three or more layers of either onyx or sardonyx. Thus the question may be asked, What kind of onyx is that? It may be either a common onyx—that is, with a black, or gray, or other dingy-coloured ground—or a carnelian onyx, a bloodstone onyx, a chalcedony onyx, a jasper onyx, or a *sard*-onyx; but the sardonyx being the most valuable and esteemed, there is always a tendency to strain a point to give the stone that name. Again, confusion worse confounded, and to which even the Italians have given way, is that of naming a sard a sardonyx, as they constantly assert that an intaglio on a pure sard without a particle of white in it is sardonyx, to glorify the stone. And another source of equivoque is, that the French word for sard is *sardoine* which sounds like sardonyx. The lapidaries are now going back to the antique nomenclature, as they call the carnelian onyxes sardonyxes.

Brazilian gem-stones from which they are formed, like the Brazilian diamonds, are quite a modern discovery.

The increased facility of staining stones is the cause of there being immense numbers of inferior carnelians, onyxes, and sardonyxes in the market, besides the fine ones. The "Oriental" (Indian, Asiatic, or African) carnelian, sard, sardonyx, and onyxes do not differ essentially from the Brazilian and German; there are the finest and inferior qualities of both. We can match the finest specimens of the antique gem-stones, some of which antique gem-stones are themselves natural, and some coloured artificially, as at the present day. We have abundance of the stones mentioned by Pliny,—"sards (including our carnelians—see page 66); "sardonyxes, those with two layers — white, and various "shades of red, orange, and brown; and nicolos (described "page 14), those with three layers, viz., red, opaque white, "and a pale translucent layer; or red, white, and black, or "dark brown"—that is, too dark to show any redness unless held up to the light—the dark layer natural, the red produced by heat. There are none of the onyxes with white and *quite black* layers that have not been stained artificially, whether they come from India, Brazil, Germany, or elsewhere. The same may be said of the carnelian, red and white; all natural brown shades can be imitated, but not the orange or golden yellow, which are found both in the Eastern and Western Worlds, and in the shingle of the South Coast of England, and other sea-shores and rivers.

Variegated brown sardonyx-agates, which look somewhat like tortoiseshell, and are used to make cups and other ornaments, are many of them beautifully shaded off from dark to lighter brown and orange, and are in some parts nearly transparent; this being the result of the action of iron upon a stone which had originally some dark veins, some parts porous,

some impenetrable. The dark ones—if they have been originally in some degree penetrated by iron-water—when held to the light have a very pleasing tint, from the admixture of the orange stain with the brown. The difficulty is to find a stone which is sufficiently transparent to possess some brilliancy or liveliness, and which will also admit colouring matter; yet there are a considerable number of them in existence, both natural and artificial,—yellow, orange, and red carnelian, sard, and sardonyx. The natural process of producing the tortoiseshell brown of an originally brown stone, penetrated by water containing iron, and afterwards exposed to air and sunlight, may be imitated artificially (as mentioned page 63) by neutral pernitrate of iron, or by tinting a natural orange stone with honey, or syrup, and sulphuric acid, which will darken the orange; but this must be done cautiously, or the stain will be black.

The onyxes, sardonyxes, and chalcedonies obtained from the Indus and the Nile are not now often brought to market, but an abundance of them might still be had from both rivers, if they were sought for. A friend of the author brought him several good specimens of onyx, sardonyx, and sard, which he found in the shingle of the bed of the Nile. Latterly these stones have been supplied abundantly from Brazil and Germany for cameos; and the onyx stones now principally used in India are those adapted for making beads. It is probable, however, that cameo-onyxes will again be sent into the market from India, especially from Cambay, which is the Oberstein of India. Nevertheless, thousands of onyx-beads are now manufactured at Oberstein, and exported to Burmah and other parts of India (for the use of the natives), as they can be made cheaper.

Hitherto we have considered only the natural and artificial modes by which *amorphous* chalcedony is altered in

colour: but the *white crystalline layers* of onyxes are also capable of great improvement; and some layers of the chalcedony, which are so translucent as not to be visibly white, may be so much whitened as to be available for onyxes. By a strong heat, sufficient to char wood, the brown of the sard is changed to carnelian red; and the translucent layers of crystalline structure are turned white by the heat, which, though it does not separate the crystals, loosens their cohesion sufficiently to cause their surfaces to refract the light, instead of transmitting it, as before—thus making the layer white instead of translucent. An exactly similar process takes place in the carnelian-onyxes and sardonyxes, when heat is employed in colouring them; most of the white layers in the natural state being of a translucent or wheyish-white tint, but when finished the white becomes milk-white, or nearly so. Thus, in a piece of gray chalcedony, with translucent lines almost imperceptible, or even darker than the rest (113), when slit in two, and one part (114) stained black or red, the translucent lines become distinct white layers; and in the manufactories lumps of translucent gray chalcedony are changed by heat into white carnelian. This whiteness, produced by *heat*, passes through the whole layer in the stone, as in the East-Indian onyx-beads blackened by *fire*. The white of onyxes, however, is improved by other means besides heat, but this is only *superficially;* it may be effected by concentrated acid, either sulphuric or nitric: thus the black and white onyxes, stained by syrup and sulphuric acid, have the white on the *surface* quite perfect; this, however, is removed in cutting down through the translucent white; but when the cameo is finished, the white may be bleached again, by steeping it for some time in concentrated sulphuric acid. *Nitric* acid must not be used, though it would improve the white, as it would withdraw the *black;* nitric acid has the same

effect in bleaching and rendering opaque the *white* layers; for if a piece of *natural* orange-brown and white sardonyx be steeped in concentrated nitric acid, it will penetrate and fade the brown, and increase the intensity of the white, but only on the surface, as it cannot penetrate the crystalline structure as heat does; and the Oriental onyxes, which are coloured by heat, have the white layer bleached throughout like the carnelian-onyxes. It is difficult to account for the bleaching effect of the acids on the white surface, but most probably it is owing to the intense affinity and attraction of the concentrated acids for water, depriving the crystalline structure of some of its water of crystallization; thus having, in a minor degree, the effect of calcination: the effect of the fire on the Indian onyx-beads is analogous; for some of them, when too much burned, are actually *softened*—that is, calcined—as well as whitened, and, in fact, in a degree spoiled. Many of the antique cameos, being on sardonyx or onyx in a *natural* state, have the white very whey-like, instead of being like milk or marble. The white of the old original Oberstein onyxes from the Galgenberg is better than either the Oriental or Brazilian.

Stones which would require a long time to shape by grinding, or sawing across, are quickly formed by breaking them with a hammer; which is the mode of formation of gun-flints, and also of the arrow-heads, and other flint implements, made by savage nations such as our ancestors previous to civilisation. The diamond itself is partially shaped in this way, as before mentioned. Agates and glass, which are both harder than steel, are sometimes *apparently cut* on the edge by a file,—but this, in reality, is a succession of *fractures;* the file could not scratch the face of the glass or flint, but when rubbed against the edge, its teeth knock off little bits, so as to alter the shape. But as soon as the edge of the glass gets worn

down smooth and rounded, so that the teeth of the file cannot catch hold of any projecting particle, to *break* it off, the stone or glass cannot be altered further by the file. Blocks of chalcedony are broken with great accuracy by a chisel placed in the desired direction and struck with a hammer—(94), for instance, was split in this way—and the pieces are again broken smaller, to the size required for shaping and polishing, on the mill, to make onyxes and agates; but if the stones are of fine quality, and with such layers as will produce good onyxes, they must be cut with more precision; which is done by a thin circular plate of iron, with diamond-powder on the edge (as described above, page 17), and sometimes by a bow, with a wire string, covered with emery-powder and oil, —a very old method, still used in India and in Italy.

The *largest* works in *flinty stone* must be executed on the same principle as the lapidary shapes agates, onyxes, and beads. *Granite* pillars, vases, and basins—some large enough to swim in, like those in Berlin and other places—the gigantic granite, basalt, and porphyry sphynxes, statues, and tombs, seen in Egypt and in the British Museum,—are worked like chalcedony. To form *pillars*, for instance, the rocky shaft, after being split in a quadrangular form from the quarry, is brought into a cylindrical shape by *breaking* off pieces bit by bit, either by a steel-pointed hammer, or by a chisel and mallet; for though a steel chisel or file cannot *cut* flint-rock as it does marble, the granite mass is thus *broken* into form, and when shaped it is made level and smooth by breaking down the inequalities with variously shaped hammers; the surface is then ground smooth by an iron rubber, with flint-sand and water. In this way, granite, porphyry, basalt, and other flinty rocks equally hard, are subdued and converted to ornamental purposes, and polished by emery and sand; the finishing gloss being given to the granite, porphyry, &c., by oxide of tin

(called "putty-powder"), oxide of iron (called "crocus"), or "tripoli," and various other polishing materials, on cloth or felt, fastened on a wooden rubber, and kept constantly wet.

It may be asked, how the Egyptians and Assyrians sculptured granite before the invention of steel; but they had a perfect knowledge of making brass, or bronze, and of rendering the common brass as hard as tempered steel, by amalgamating it with tin,—and thus they had very efficient pointed chisels and hammers; beside which, stone hammers could be used for levelling inequalities. A clever mechanician has improved upon the mode of finishing granite, and other hard stone pillars, on a small scale, by *turning* them (lathe-fashion) with a diamond chisel; the advantage of which is, that it saves much time, and, it is said, expense; because the diamond chisel will level all the hammer-marks, and cut the surface so smooth as to dispense with tedious grinding down by sand; merely requiring the last gloss to be given by emery, putty-powder, tripoli, rotten-stone, or whichever of these finishing materials is preferred.

All the mineral substances that we have as yet considered as the materials of gems were prepared for man, and deposited in the earth, before his own creation; but there are beautiful ornaments—the shell cameos—such as (155), from Theed's Disconsolate Sappho,—the original in marble, 3 feet 6 inches high; (108), Cupid Triumphant, by Diez; and (109), Cupid Chained, by the author,—a copy of a well-known gem,—which are made from the shells of animals which still exist in the sea. These shells, — called bull-mouth (*strombus*), helmet (*cassis*), &c.,—when cut through, are found to consist of two layers: the outside one is white; the inner, either dark brown, like sard, or pink, orange, or yellow. These, being not harder than marble, do not require diamond to engrave them, but, like marble, are cut by small steel chisels, called "gravers;"

like (73), they take a fine polish, and are admirably adapted for portraits; the only disadvantage being, that the dark ground is liable to crack. Shell cameos are much less expensive than those in stone—*pietra dura* (page 4)—and it seems that the Latin word *gemma* ("gem") has never been applied to them. It may be, probably, that the Greeks and Romans had not the beautiful shells above named, which are now used, and which come from the New World, the West-Indian seas, and from the savage West Coast of Africa, nearly as little known by them. The few shell cameos which were made in Italy formerly—even before the cinque-cento—and have come down to us, are totally different in appearance; they are very delicate and perishable, being made from a kind of mussel or cowry-shell, and the ground is of a bluish-gray colour, instead of the rich brown, orange, and yellow sard and sardonyx tints of the West-Indian and West-African shells.

We must not omit to mention another animal material, *ivory*, used by the most celebrated Greek statuaries, and employed by sculptors down to the present time; this, however, is not a good substance for works of art, as it changes colour and is perishable; which has prevented our obtaining many specimens of ancient art in this material, though a few have been found at Nineveh and elsewhere, partially decomposed.

Having so far explained the mechanical appliances for gem-engraving, and the nature of the jewels and stones employed, we must consider the qualifications and requisites for an engraver. The physical education should be the same as that of the sculptor,—he should begin by acquiring the power of *drawing* correctly, and then of imitating nature, the human face and figure, by modelling in clay, copying fine busts and statues, and afterwards the living model; but some skill must

be attained from busts and statues first, as the student cannot work quickly enough at the beginning to copy the living model. He must also perpetually keep up the practice of drawing, in order to sketch his subject on the stone, and also that—when he has advanced far enough to invent subjects—he may be able to record the results of his imagination in his sketch-book.

When the student has learned thoroughly the human face and form, and can model figures in clay the size of life, he should begin to practise the more difficult performance of bas reliefs of various sizes, from that of life to a foot high, in clay, on a board; all of which he ought to be able to draw in his sketch-book quickly and correctly. When he has reached this stage, he may begin to model, in the way especially useful to the gem-engraver—that is, with white wax—small bas reliefs, on round or oval slates, or coloured glass, three or four inches in diameter at first, but afterwards much smaller; making a representation in wax of the cameo or the intaglio impression which he is to engrave. And now he may begin to try his hand in cutting the stone; but not sooner, if he hopes to attain eminence. This would appear strange, not only to some, but to the generality of our seal-engravers, who never made a model in their lives, who have never done anything but copy the impressions of celebrated engravers, and who, if they are commissioned to make a likeness, are obliged to copy a bust, picture, or photograph, instead of making the portrait in wax from life. Undoubtedly photography is a useful assistance to the best engraver, for sometimes he cannot get a sight of the original—as (110), a cameo portrait by Isler, from a photograph sent from the East—but it can never fully supply the place of the artist's own model, if he has learned to make one; as (115[115]), and

[115] Napoleon I., taken during the hundred days, by Pistrucci.

(126[126]), wax-model portraits;* or (145[145]). The wax model being perfected, the engraver copies it, at his leisure, as a sculptor copies his clay model, either in gem, coin, or medal; as (160), cameo portrait of the Emperor Napoleon III., by Lebas, of Paris; (111), a cameo portrait of Pistrucci, sardonyx, modelled and engraved by his daughter Eliza; (168), a cameo on carnelian-onyx, by the same, of her Majesty Queen Victoria, from Pistrucci's wax model taken from life for the Coronation Medal — a speaking likeness; (112), the impression of an intaglio portrait of Canova, by a Roman gem-engraver; (138), a medal of Pio IX., by Cerbara; and (133), a medal of Cardinal Gonsalvi, by Girometti: all previously modelled in wax.

The modelling wax is made by melting the best white wax, and stirring into it either whitelead, or oxide of zinc or of bismuth (Spanish white), in the proportion of about one quarter of the *weight* of white powder,—which is for the purpose of taking off the transparency of the wax. This compound must be stirred until it cools, or the white will fall to the lowest part, and not be equally distributed. Some persons mix a little vermilion, or other red, to give a pink tint to the wax; but it is a bad custom, practised by those who cannot work the white wax without smearing it; the model does not look so well, nor is it like the white of a cameo. A little oil of turpentine is to be mixed in whilst the wax is still liquid—about

[126] Caroline Billing, by the author, copied in a jasper-onyx cameo by Elena Pistrucci (154).

* Many persons employ artists who are only modellers, not engravers, to make wax-model portraits, as may be seen annually in the Exhibition of the Royal Academy. These models will last many years, if secured under glass. Some of the wax models photographed in this work are from thirty to sixty years old, and as perfect as when first made. Many of the beautiful figures and groups in the exquisite productions of Wedgwood, were modelled by Flaxman.

[145] Wax model of a Faun sporting with his young one; afterwards engraved in cameo, on a bloodstone-onyx, by Pistrucci.

seven or eight drops to every ounce of wax; this is for the purpose of making the wax adhesive; as without the turpentine fresh-added bits of wax would not stick on in working the model. For forming the figures and features, sticks of boxwood are used, of the same shapes as those employed by sculptors with their clay models. Benvenuto Cellini gives an accurate description of his mode of making modelling-wax, and how the model should be made on a black stone—as he denominates the slate (*lavagna*)—preparatory to making a medal or coin (*Vita di Cellini*).

When the artist has composed any subject containing figures, he ought to hire the life-models of the Academy to compare them with and correct them by. This mode of proceeding is too expensive for the generality of engravers, who do a great deal of common, cheap work: and, unfortunately, some of the best engravers are obliged to execute work very rapidly and carelessly, in order to gain their living, as there is a great demand for cheap engravings for jewellers' work, and but little sale for works of high art and high price. Still, connoisseurs do not the less admire the finely engraved gems because there is so much rubbish in the market, any more than they would despise or neglect the works of skilful painters on account of the number of daubs which are perpetrated. Fortunately for sculptors and statuaries, marble and bronze statues are too expensive to admit of inferior artists; and, therefore, Thorwaldsen, Canova, Cooper, or Gibson had to compete only with their compeers.

In modelling bas relief in clay for sculpture, which is done on a flat board, the edges or outlines of the figures should not be undercut, nor, in fact, ought any part; but should be left with the outline touching the table almost perpendicularly, so that a plaster-cast waste mould may be taken of it, to be used to make a copy of the bas relief in plaster, as a guide for sculpturing the marble, just as a seal or intaglio delivers

impressions in wax, plaster, or sulphur; and in skilful bas relief the limbs will not be raised or stand out, but will be foreshortened, so as to produce the same effect as foreshortening in a picture; which shows the advantage of a sculptor or gem-engraver knowing how to draw. This does not apply to high relief (alto relievo), such as the metopes of the Elgin marbles, parts of which stand out, and of which the casts must be made by moulds in a great many pieces, like the moulds for casting a statue or bust. All intaglios and cameo bas reliefs ought to be free from the defect of undercutting on the outlines or any part; as is the case with such cameos as those of Girometti (15), Pistrucci (6), Pannini (43), Neri (33), or Amastini (44), &c. For example, it is impossible to get the nail under the outline of any of these beautiful cameos, to raise them out of their case. When the outline is undercut, there is great danger of some part of the edge being broken off, and this mostly happens with the nose; thus rendering the work useless,—*ecce signum* (96). This accident occurs with the limbs and raised parts of alto relievo: and we see how much the Elgin metopes, as (1), are mutilated; whereas the flatter bas-relief friezes (2) are little damaged by time or knocking about. The high relief was necessary for the metopes, on account of their height from the ground and distance from the eye; but the friezes, being nearer to view, are quite as effective, though not raised above an inch or so from the table, whereas parts of the metopes project eight or ten inches. In cameo-engraving it is rather a vicious style to make the bas-relief work too high, and shows deficiency of skill.

A clever engraver can give all expression necessary in a thin stratum of the white of an onyx, by graduating the elevations, equivalent to the shading of a drawing, just as on a *modern coin*, which can be very little elevated, as it receives

only *one* stroke of the die; whereas *medals*, like antique coins, are much more relieved, being "brought up" by several repeated strokes of the die. Analogous to a *modern coin*, there is a copy of the Minerva of Aspasius (43), an excellent cameo by Pannini—the white of which is not thicker than a common playing-card; and there are many antique cameos of which the white is very thin. Fine cameos, as (125)—a youthful Bacchus, by Pistrucci—occasionally have ornaments, such as leaves or flowers, hollowed under, which require to have the edges filled up with wax to take a cast of them, but never the outline next the table; on the contrary, it is partly the vice, and partly the necessity, of ordinary cameo-engravers to undercut the edges, because it saves them time and trouble in levelling and polishing the table; which can be done but very *slowly* and cautiously when the outline *touches* it, as it ought to do. Much allowance must be made in this respect to the cameo-engraver, who has often great difficulties to contend with. The intaglio-engraver, the sculptor in marble bas relief, or the die-engraver, has to deal with a homogeneous substance, which he can treat according to his taste and judgment; but the onyx often has its strata much curved, and there may be an excellent *thick* white, so much elevated in some places that the engraver cannot get his outline down to the table. When it is necessary to make a mould from a cameo, which is undercut either at the edges or in the ornaments, instead of filling up the hollows with wax, a mould may be made of melted gelatine, size, or other glue, poured upon the gem, which when cold, being elastic, can be drawn off and used to make plaster casts from. Casts of small busts can be made in the same way, as (82). The intaglio-engraver is spared all trouble about the table of his bas relief, because its *table* is but the *impression* of the smooth surface of the seal-stone, which is made flat for him by the lapidary; whereas the cameo-engraver has a

most difficult task to make his table, or the ground of his cameo, level up to the outline of his subject: and, with all deference be it spoken, when we see a table perfectly smooth and even—like those of Girometti and Pistrucci—to a cameo gem, called an antique, it is rather suspicious; as the antiques are decidedly deficient in that respect,—their ground, or table, being more or less wavy.

A propos, let us take into consideration the requisites for *forging* an *antique* intaglio or *fragment* of an antique—a very common deception. The first step is, to procure a fine stone of Oriental quality (which is not very difficult), either uncut or with a subject badly cut,—perhaps a bad antique,—so that it is worth while to recut it, and make it into a good-looking antique; which is easily done by an engraver of moderate skill: or, if the stone has not been cut before, it must not be shaped of a good modern oval and well polished, but cut and shaped in the clumsy style of the ancients, easily imitated, the edges and back being often left rough from the mill. He has then to select some hackneyed subject—such as the Diomede, or a Victory, or a sacrifice, or other ceremony—and imitate it, making just enough variation for it not to look like a copy; such as introducing a vase or something which is not in the original, or leaving out a weapon or some other implement which is in the original; he has then to polish up the engraved part to a degree rather over than under what was done by the ancients, as few connoisseurs will suspect that it is "too good to be true;" then, if the gem is an intaglio, it must be scratched, or at least made a little rough, on the front and back of the stone; for which we are told of innumerable expedients, including that of putting it into the stomach or gizzard of a fowl or turkey;—but it is quite unnecessary to resort to such a cruel practice, as nothing will do it better than a piece of coarse emery-

paper, or a stick of boxwood with coarse diamond-powder; it must, however, be skilfully done, so as not to make long or parallel scratches. Two of the best specimens that have been produced of forged fragments are in the possession of Mr. R. Phillips, of Cockspur Street; these two are made out of one stone,—a dark-brown Oriental sard; the engraver broke it across, and on the larger portion made a most antique-looking intaglio (117), apparently the worship of Pan, or some such subject, quite open to a controversy such as might have been sustained by Visconti; it really looks a highly respectable fragment of an antique. But the engraver, it would seem, thought it a pity that the other portion of such a fine stone should be left unemployed; so he made that into another antique fragment, with another subject; that is to say, the head, neck, and fore-quarter of a lion (118) passant, very well engraved; not a modern heraldic lion passant, but a real grumpy-looking lion, from an arena, perhaps, of the Coliseum—it would pass for the fore-part of the group of Cybele riding on a Lion, which is a common antique subject (119); this fragment he antiquified more than the other; for whereas the one with the sacrifice is smooth on the back, the other with the lion has been much scratched. (120) is the absurd-looking impression when the two pieces are reunited. It is strange that, after their wanderings, they should have met again in the possession of any one connoisseur. There is also another ingenious imitation of the antique: the oval of the stone is peculiar. Many, though by no means all, antique intaglio stones are not of the regular elliptic oval, such as is produced by an oval turning-lathe, but flatter at the sides and blunter at the ends,—the oval adopted in the antiques in imitation of the base of the scarabei. Thus more ingenuity is often expended in swindling than would get an honest livelihood. Pliny

records what a lucrative business the forging of gems was in his time.

There are no trustworthy documents existing whereby the antique gems in cabinets can be identified or recognised; we have nothing but the guesses and assertions of Visconti, Winckelmann, and others; the latter either the tool or accomplice, or both, of the arch-humbug dealer, Baron Stosch, who employed Natter and the other clever artists of the last century to engrave gems in the style of the antique, and then wrote invented histories of them, and sold them to crowned heads and other noble collectors throughout Europe; and these certificates of baptism are carefully preserved for the benefit of each bantling. Poniatowsky repeated the same trick; but it was stale, and soon notorious. It might be thought that long practice should enable one to distinguish a genuine antique: but there are proofs enough to show that it is impossible; you may be able to decide that a gem is not antique, but by no means that one is. The very faults of antiques are so cunningly imitated as to baffle the judgment; and if there be a gem which answers to the catalogue of the Medici, ten to one but you find two or more hardly to be distinguished from it, if it be the original,—*e.g.* the Julius Cæsar of Dioscorides, &c.

It is a remarkable circumstance connected with these gem-forgeries, how much more easily they pass current if judiciously broken, so as to look like a fragment, and yet not too much broken off. The double-fragment forgery just described was made so from the beginning; but many of the would-be-antique fragments have been carefully broken, so as not to lose much of the group or figure; for instance, a piece knocked off at the lower part, so as to detach only a foot, or a part of one; or if the subject be a head, at the top of the head, like the Io of Dioscorides (85), which has a small gap

broken out of the top of the head; whilst some of the fragments, real or fictitious, have the face without the back of the head, or only part of the face,—sometimes the upper, sometimes the lower,—as (123),* and others in various collections and in the British Museum. These fragments, both real and forged, are commonly seen in gold mountings, the deficient part of the face, &c., being supplied by gold to fill up the setting. There is one in the Florentine Museum; only a neck and shoulders, with the whole of the face broken of,—a palpable trick; it is of red jasper, not particularly well engraved. Most likely, when finished, the artist, or purchaser, being dissatisfied, broke it, and then on second thoughts turned it to account by selling it as an antique fragment. Some celebrated engravers—Natter, for one, it is said, and others, are well known to have pushed a thriving trade in forging antiques; but we have never heard of either Giovanni Pichler, Girometti, or Pistrucci being accused of the practice. It is true that they and other clever young artists at the time were made tools of by Bonelli and other dealers in gems, who sold their works for great prices as antiques (witness the Flora of Payne-Knight); he took care not to let this be known to them: but Pistrucci first suspected and then detected him. This Bonelli was a dealer in gems, and was constantly travelling round through the capitals of Italy, Russia, Germany, France, and England, returning at intervals of one or two years to Rome; selling and buying gems and stones for engraving wherever he went in his route, and of course replenishing his stock whenever he returned to Rome, by purchasing from the peasant gem-seekers and finders in the vineyards and ruins about the Forum, Appian Way, and other parts. Some of these he had

* Fragment of an intaglio of Apollo (British Museum); a very celebrated antique.

retouched and improved by the artists just named; the uncut stones he got engraved with subjects in the antique style, giving to the artist the onyx, sard, or sardonyx, and with it a subject, not to be servilely copied, but imitated (as already mentioned); of course never permitting the engraver to inscribe his name,—or if he obstinately did so, it was quickly effaced,—so that none of these artists got the credit due to their skill. These works, being truly beautiful (though not really antique), were eagerly purchased by such collectors as Demidoff, Roger, Blacas, Payne-Knight, Webb, &c. It may be worth while to give an account of a couple of them. The first is a real antique, which was given to Pistrucci to be improved (not by Bonelli, but by another dealer, Domenico Desalief), on a fine sardonyx as large as a man's hand; the subject, a warrior crowned by a female figure, the crown standing out in high relief; the whole wretchedly cut, as those can vouch who have seen the cast of it taken in its original state. Fortunately, it was so clumsy that there was plenty of material to cut away to reduce it to just proportions; for instance, the legs were so short and thick that he cut away the knees, and recut them higher up in their proper place; he took two impressions, one before and the other after the alterations; from the first impression he took a cast in wax, of which he made the model of the new gem,—for there was scarcely a trace of the old one left; and by this wax he could of course see how much of the stone he could afford to cut away. After this gem was finished it found its way into the Imperial cabinet of St. Petersburg, where it is considered a *capo d' opera* of antiquity, and was estimated as such by many judges, amongst others by Denon, the Director of Medals in Paris. It was not possible to obtain a photograph, but the woodcut (from a pencil sketch), although imperfect, shows sufficiently the size and subject of the cameo,—a victorious

general, or emperor, crowned by a Province, usually represented with a Cybele head-dress. The other is the Flora of Payne-Knight, left by him, with other gems, to the British Museum. In this case Bonelli did not give a cameo to be altered, but supplied a piece of uncut onyx, of a shape apparently hopeless; true, there was enough of excellent white to make a front or three-quarter face, with a third colour above it to form into some ornament; but, alas! there was not enough table to make a whole gem; he therefore proposed that a handsome face should be cut so far as the white would allow, leaving the stone nearly as it was, which would look as if it had been broken off at the neck—in fact, like a fragment (121). The result proves how skilfully the order was executed, as it deceived one of the best connoisseur judges in Europe, to whom Bonelli sold it as an antique. Mr. King's remarks on the Flora, in his valuable work,* elicit an instructive commentary on gem-engraving; he says, it was "infinitely below the expectations he had formed of so highly lauded a performance." As an experienced judge, he makes a similar remark upon the Diomede of Dioscorides: that, "probably, from the exaggerated idea one had conceived "beforehand of the transcendent excellence of this artist, from "the sight of his heads (in which, doubtless, his forte lay), "the first view is rather disappointing." The fact is, that the engraver of the gem would never spontaneously have wasted his time on a stone of his own which was not of the best quality and shape; but this was a task set him by Bonelli (to make the most of an almost impossibility); and the shape and colour of the fragment of the stone accounts for the objections made: first, in order to produce the features, and also to make use of the third colour, it was necessary to put the head on the side, instead of making it a front or three-quarter face; so that,

* *Antique Gems.* By Rev. C. W. King, M.A., &c. 1860.

besides the profile seen in front, nearly two-thirds of a face are visible, looking at it sideways, lying with the cheek on the table (122); unlike any gem made before or since. Again, the stone being a piece of an Oriental carnelian pebble (*breccia di carniola*), with a red bark on the outside (from which the flowers of the wreath are cut), bending round the forehead, gave an opportunity—which never occurs with a flat stratified onyx —of letting the wreath actually follow the shape of the head, —an accidental circumstance of which the engraver took advantage. Again, the small portion of table visible is somewhat uneven, like the antiques, and not like the usual tables of this artist, which are uniformly as even as the table of the impression of an intaglio. The gem, then, is not only eminently beautiful, but unique; and the very inequality of the table, the beautiful quality of the red and white of the Oriental stone, the *bizarrerie* of the position, quite justified such a good judge as Payne-Knight in considering it a unique and, as he was told, an antique fragment. But, then, Payne-Knight was a connoisseur collector, not an engraver—theoretical, however skilful—and one who knew little about the practice of gem-engraving. Pistrucci did not intend it to *imitate* an antique; it was merely an effort of imagination, on an awkward piece of stone; but Bonelli turned it to good account in his own way. It has been suggested that it is evidently not antique, because undercut; but, in justice to Payne-Knight's judgment, it must be observed, that it is not *undercut* bas relief, in the sense mentioned at page 78, but *high relief engraved down to the table*—as can be seen in (122); as, looking at the cameo sideways, the whole of the mouth and nose, and part of the eye, are visible,—unlike a profile cameo when undercut.

In his last work,* Mr. King returned to the charge.

* The *Handbook of Engraved Gems*, 1866; written as an introduction to his *Antique Gems*.

He says: "I examined with great interest, not unmixed "with amusement, the notorious* Flora; the cameo which "first brought Pistrucci into notice,† it having been passed "off‡ upon Payne-Knight — the 'Magnus Apollo' of "the *cognoscenti* of his day—as one of the choicest pro- "ductions of Greek art. It speaks little for the prac- "tical knowledge of his set — notwithstanding the price "at which they had been for many years buying experi- "ence—that they should have been thus imposed upon; "for the very first aspect of the work were sufficient, one "would think, to make any one possessing the least ex- "perience in cameo work pronounce it at the earliest a "piece from the cinquecento school, of which it betrays all "the peculiarities."

"The head is very much undercut,§ and in three-quarters "relief; the hair encircled with a garland of red roses,‖ "in execrable taste, and quite inconsistent with the classic "period claimed.¶

* "Notorious." Why not rather say "celebrated"?

† Pistrucci had previously made his way to fame in Rome, Florence, and Paris, by his works, which caused him to be noticed by such men as Roger, Dedre, Denon, Blacas, &c., and then by Lord Maryborough, previous to the epoch which Mr. King seems to think was the commencement of his career.

‡ "Passed off," not by Pistrucci, but by an unscrupulous dealer, Bonelli.

§ "The head is very much undercut." But if it were, would that be a "peculiarity of the cinquecento school?" It is *not*, however, undercut, but *engraved* down to the table; and is *not* in "*three-quarter* relief," like (110), but in perfectly *flat profile*, though in *high* relief.

‖ The *garland* consists of seven *flowers*, but *not all roses*: there are only three roses, two poppies, and two marguerites. As to the "execrable taste," *chacun à son goût!*

¶ Who claimed the *classic* period? not the maker, Pistrucci, who was a candid and clever man; but Bonelli; and his victim, Payne-Knight.

"It is broken off at the neck,*—the trick then in vogue "for giving the colour of antiquity to a recent production; "and upon this section of the neck (which the setting covers) "Pistrucci is said to have cut his name,† so as to be able at "pleasure to vindicate the authorship of the work. In other "respects the execution is fair enough, but not comparable "to hundreds of other camei of the later Italian school,‡ and "falling immeasurably short of my preconceived ideas of so "highly lauded a performance."§

It does not, however, fall short of the expectations of other excellent judges of this sort of things, including some skilful engravers. With one of these, the following conversation occurred:

Are you acquainted with Pistrucci's works?—Yes, a great many of them.

Have you seen the Flora?—Yes, twice.

Did you examine it?—Yes, a very long time, as it deserved.

Do you think it in his manner?—Not at all.

If you had not been told, to what date would you refer it?—Antique, decidedly.

* It is not *broken* off at the neck; the stone was broken there before it was engraved, and it was ground flat to fit the setting (*vide* Appendix, p. 186).

† Pistrucci did *not* cut his name—and there is no name—under the setting; he engraved a secret mark—which is now no longer secret, as the author has divulged it (Appendix)—on the top of the head. It may be difficult, but perhaps not impossible, to trace from whence came the *canard* of the name under the setting.

‡ "Fair enough!" He is a fortunate connoisseur to have enjoyed the sight of "hundreds of other camei of the later Italian school to which it is not comparable."

§ Precisely his expression about the intaglio, the Julius Cæsar of Dioscorides, which is his *ne plus ultra* of genuine antiquity, including the *signature* of Dioscorides,—about which, by-the-bye (in his last book), he begins to waver. But the atmosphere of the Museum seems sometimes to throw an unfavourable shade over its contents.

Not cinquecento?—Certainly not.

Is it not in that style?—It is in no style; there was never anything like it.

But there is no antique with such a raised-up relief?—How could it be otherwise? there was such a thick white under the red of the flowers, and it could not be made less raised; and a beautiful face was cut in it.

But it is undercut?—It is not undercut, but engraved down to the table.

But roses are not Grecian or antique?—No? Have you never read or heard of the ancient Greek Anacreon and his roses? Do you think he was cinquecento?

This was decisive. *Apropos,* we may as well quote one of Anacreon's Odes to the Roses.

ΕΙ'Σ 'ΡΟΔΟΝ.

Τὸ ῥόδον τὸ τῶν Ἐρώτων
Μίξωμεν Διονύσῳ,
Τὸ ῥόδον τὸ καλλίφυλλον
Κροτάφοισιν ἁρμόσαντες,
Πίνωμεν, ἁβρὰ γελῶντες.
Τὸ ῥόδον φέριστον ἄνθος,
Ῥοδόν Ἔαρος μέλημα·
Ῥόδα καὶ Θεοῖσι τερπνά,
Ῥόδα τοῖς ὁ παῖς Κυθήρης
Στέφεται καλοὺς ἰούλους,
Χαρίτεσσι συγχορεύων.
Στέφωμεθ' οὖν Λυρίζων
Παρὰ σοῖς, Διόνυσε, σημοῖς,
Μετὰ κούρης βαθυκόλπου,
Ῥοδίνοισι στεφανίσκοις
Πεπυκασμένος, χορεύσω.

Which means:

Cupid's *rose* with Bacchus' vine,
Lovely maiden, round our brows,—
Beauteous *roses* let us twine;
Joyous let us then carouse!

Matchless, cherish'd flow'r of Spring,
Rose that e'en the gods delights,
When, with the Graces joining,
Venus' son in dance unites,
His fair locks with *roses* bound.
Strike the lyre to Bacchus' praise,
And, with wreaths of *roses* crown'd,
At his shrine our voices raise;
Then join the whirling dance I must
With Chloe of the beau eous bust.

The same Ode, from Moore's *Anacreon:*

"Buds of roses, virgin flowers,
Cull'd from Cupid's balmy bowers,
In the bowl of Bacchus steep,
Till with crimson drops they weep.
Twine the rose, the garland twine,
Every leaf distilling wine;
Drink and smile, and learn to think
That we were born to smile and drink.
Rose, thou art the sweetest flower
That ever drank the amber shower;
Rose, thou art the fondest child
Of dimpled Spring, the wood-nymph wild.
Even the gods, who walk the sky,
Are amorous of thy scented sigh.
Cupid, too, in Paphian shades,
His hair with rosy fillets braids,
When with the blushing sister Graces
The wanton winding dance he traces.
Then bring me showers of roses, bring,
And shed them o'er me while I sing;
Or while, great Bacchus round thy shrine,
Wreathing my brow with rose and vine,
I lead some bright nymph through the dance,
Commingling soul with every glance."

Moore's version of the Ode is most beautiful, and eminently poetical; but it is rather a paraphrase than a translation, and does not convey to the English reader the style or exact meaning of Anacreon. My above attempt, however, is a literal (*ipsissima verba*) construction of it,—not one word less

or more, except the name Chloe in the last line. This subject being proposed to another gem-engraver, Luigi Isler (a Roman), he immediately made a drawing and design, without reference to any sculpture, picture, or gem, and executed the cameo (170), of Chloe.

The reader may think that Pistrucci occupies a large space in this treatise, but it is impossible to do justice to the subject without constantly referring to him and his works; he was, and is, and will remain, the immortal of the nineteenth century, as Dioscorides of the first, and Cellini of the (cinquecento) sixteenth. His works (unsigned) are placed amongst the treasured antiques of the Russian and English National Museums; and in the Vienna Gallery a cameo of his, *signed with his name*, is placed conspicuously in the post of honour amongst the most esteemed antiques.

His George and Dragon on the coins is, in Mr. King's estimation, "probably the finest work that has ever appeared on a modern currency" (129). The Coronation medal of George IV. (130 and 131), the same accomplished judge pronounces "a very spirited work;" and also "the double sovereign (128), in spite of the scratchy treatment of the hair." As it happens, however, the objectionable head, with "scratchy" hair (128), was not executed by Pistrucci, as he refused to copy Chantrey's portrait, but was engraved by Merlen (one of the assistants of the Mint), from the bas relief by Chantrey; and it was he who produced the *petit maître* smirking face (128), not to be compared with the steady countenance, by Pistrucci, on the Coronation medal (130), —in which, however, he was obliged to imitate his Majesty's peculiar toupee, as otherwise he would not have looked like himself.

The Coronation medal of George IV. afforded an example,

worth relating, of ingenuity and skill in expedients in the art of coining. When the gold proof-piece was shown to his Majesty, he approved of the obverse (130), which is immensely flattering, though not so much as he wished, as nothing satisfied him except Lawrence's juvenile-looking portrait; but he immediately remarked that on the reverse proof (132) he was not properly placed, being *on a level* with the allegorical figures of England, Scotland, and Ireland. This the Master of the Mint, in despair, reported to Pistrucci. What was to be done? There was not time to engrave a new die. After a moment's consideration he said, "I shall elevate his Majesty." He then cut the die perpendicularly in two, just at his Majesty's foot, slid one piece a little above the other, so as to raise that part of the platform under the throne above the other part, and continued the under line of the platform to make it even,—as seen in (131), the reverse of the *published* Coronation medal. The fact merely is stated here; it is unnecessary to enter into explanation of the punches and dies employed in the process. Still we have to explain to the reader how steel dies, for striking coins and medals, are made.

The *first* die engraved is an *intaglio*, copied from a wax model, or other design, cut in the softened, untempered *steel* die, not by *diamond*—as stone intaglios are—but by *steel tools*, called "gravers," like those used by copper-plate engravers, somewhat similar in form to (73) and (74). As the engraver works on, he takes an impression, or "squeeze," of the work from time to time, as with intaglio gems (102) (see page 19): some use the trial wax; but Pistrucci preferred modelling clay, stuck upon the end of a piece of wood, shaped like a mushroom or an office-seal, which, being struck by a mallet, gave a rapid and perfect impression.

This *first steel intaglio* produced is not used for stamping coins or medals, and is not denominated a die, but a MATRIX.

This *matrix* is hardened, and then another blank steel die (not tempered or hardened, but in an annealed or softened state) is struck down upon it, so as to receive the impression of the head in relief, the same as the coin or medal is to be. Neither is this called a die, but a PUNCH, or puncheon (*poinçon*), which, after being struck from the matrix, is finished as highly as the artist is able, like a cameo, and then hardened: hence it is evident what an advantage those engravers have who execute gems in relief, cameos as well as intaglios.

The PUNCH is used to impress the soft-steel blank DIES, which when hardened are ready for striking the coin or medal. The dies frequently break and crack in working, and fresh ones have to be struck from the punch.

The ancients coined money and medals before the discovery of the method of making *steel*, and it has frequently been discussed what dies were employed by them, and how made; but this may be easily explained: they knew how to make, melt, and cast brass—or rather bronze—and they could cast a bronze die upon a model (of a face or animal) made of clay, and dried; thus producing a die by which gold and silver, or even copper, could be struck. It is true, common brass is not hard enough for the purpose; but by mixing or alloying it with tin (with which the ancients were well acquainted) it is made harder than iron, very nearly as hard as steel; in fact, it was used before steel (as mentioned by Homer*) for weapons; and it is quite hard enough to give

* Iron is not mentioned by Homer as the materials for weapons, but, incidentally, as that of agricultural implements, as axes or ploughshares (ΙΛΙΑΔ. Ψ.); but, two or three centuries later, it appears to have been employed for arms, offensive and defensive, and for tools, by the Assyrians.

an impression to pure gold, or silver, or copper; all of which, moreover, can be "annealed," or softened, by putting them in the fire; becoming thus *soft* and easily stamped: whereas, the gold and silver *coins* of the present day are alloyed with *copper*, to make them *harder* and *more durable*. From examining the shapes of antique coinage, we may judge that the bits of gold or silver for each coin were made roundish on the surface, or of a turnip-shape, so as to enter more easily into the hollow of the die; and the flat surface of the die, when polished, would give a good even and bright surface to the table; whilst the hollow part, having a surface similar to the clay from which it was cast, would give an agreeable "mat," or "matte," appearance to the head, similar to the unpolished parts on silver or gold ornaments, as we see in medals of the present day. It has been already explained that at all periods gem-engravers have cut dies for coins and medals; and, of course, the ancients before the discovery of steel would employ the same adamant points for their dies as for intaglios or cameos; and they could thus either engrave a die from the commencement, or finish it after it was cast.

It has been suggested that ancient dies might have been made of cast-iron, because the surface of cast-iron from the foundry is so hard as to resist a file; but this is merely on the surface,—a skin, not much thicker than paper; and if a die were made of cast-iron—like the hard brass or bronze ones above described—the surface would crack at the first blow, and the middle sink in with the pressure, so as to spoil the impression; whereas, the bronze is equally hard to the centre, like modern steel.

It is difficult, if not impossible, to ascertain when the method of converting iron into steel was discovered; there is no distinct Greek or Latin designation for it: the word "Chalybs" —the name of the ancient people who discovered iron, and

which has been assumed by the moderns to express *steel*—was used, evidently as late as the Augustan Age, to signify *iron* only; as by Virgil (*Æn.* viii. 445), in the description of the Cyclops making the armour for Æneas:

"fluit æs rivis, aurique metallum;
Vulnificusque chalybs vastâ fornace liquescit;"

which may be rendered:

Brass runs in streams, and eke metallic gold,
To deck the armour of the hero bold;
And wound-inflicting *iron molten flows*,
Where the vast furnace heaves with fiery throes.

Now, according to the Latin text, this "chalybs" was not merely *iron*, but *cast*-iron, and could not be *steel*, seeing that it was before the time of Bessemer, who has patented the discovery of making steel from the ore.

Reference may also be made to the passage in which the great peculiarity of the island of Elba is recorded:

"ast Ilva trecentos,
Insula inexhaustis Chalybum generosa metallis"—(*Æn.* x. 173),—

"the island of Elba, prolific in the inexhaustible *metal of the Chalybes*"—that is, *iron;* which character is applicable to the island even to the present time:

Elba for iron still enjoys renown,
And there Napoleon of the iron crown
His prison's bonds exchanged for blades of steel,
With his Old Guard to make the nations feel,
And Europe's monarchs tremble for their seats,
When they bethought them of his former feats:
They joined with serried ranks to hunt him down,
And from his brows to wrest th' imperial crown;
Which, being won again by his great heir,
Shows that no master-mind should e'er despair
While, with a patriot's zeal and steady hand,
He sees a nation fitted for command,—
A nation glorious, loyal, brave, and true,
When a commander worthy meets its view.

[The Italian "iron crown," which has decked the brows of

heroes from Charlemagne to Napoleon, must not be imagined to be a piece of ironmongery; it is a crown of gold, richly ornamented with various jewels, and containing, in its *rim only*, a narrow bandeau of iron, about half an inch wide; supposed to have been inserted to give sufficient strength, with a less weight of gold. But the excuse made for its introduction was, that it was one of the nails of the "Holy Cross."]

Again, Virgil (*Georg.* i. 58) writes: "At Chalybes nudi ferrum"—"The naked Chalybes send iron." In all these instances Chalybs is evidently a patronymic implying *iron*, as the product of a country famous for it, and not steel.

At page 1, line 6, the word *lima*, which is translated "file," can ill express the *file* of the present day, made of *steel*, as the method of making steel had not been discovered at that epoch; moreover, a steel file could not make any impression on a jasper. The *Thynica lima* could have been only an instrument formed of a splinter of emery, corundum (page 32), or of wood, in shape of our files, and spread over with emery or corundum powdered; having been first smeared with glue, or some other matter, to make the emery adhere, like tools of that kind which are used by artisans of the present day for grinding and polishing the hardest steel, and which *could* shape and polish jasper and other gem-stones.

Except portraits, the author is not aware of any *original* subjects in cameo by Girometti, the engraver of dies in the mint of Rome: he generally copied some well-known subject; his workmanship is exquisite."* Nothing can be finer

* The same may be said of the intaglio-engraver, Marchant,—one of the best and, in a pecuniary point of view, most successful of the gem-engravers of this century; his works, excepting portraits, are all copies from the antique statues in Rome; they are all intaglios, except one poor copy, from an obelisk, of a hieroglyphic Sphinx,—which is not a real bas relief, but sunken, like the Egyptian one on the staircase of the British Museum.

than his cameo of the parting of Hector and Andromache (15) (after the intaglio of G. Pichler), which was exhibited by Phillips, of Cockspur Street, in the Exhibition of 1862. His intaglio engraving was confined chiefly to the dies of the Mint. Pistrucci — the contemporary of Girometti — never copied any gem,—except for the purpose of learning, when a boy,—though he condescended to model and engrave one of the Bronsted bronzes in the British Museum (6). Of the Greek artists he was an infatuated admirer. This may perhaps have been one (but only one) element of his success; his favourite maxim, from the only Latin writer he could tolerate (the reason will be seen hereafter), being:

"exemplaria Græca
Nocturnâ versate manu, versate diurnâ" (*Horace*),—

"Study Greek originals, day and night." We have abundant evidence that he possessed the *talents* of the Greek; his skill in drawing and modelling was unrivalled, and his perseverance indomitable; he never parted with a work until it was finished "ad unguem:"

"Nil actum credens cum quid superesset agendum" (*Lucan*),—

i.e. "considering nothing finished as long as it could be improved;" and he never hurried a work unless perhaps a portrait (which was always easy to him), if it was required immediately. Any fine work he always laid aside for weeks at a time, that he might see it with fresh eyes.

It was in the Strozzi Gallery—in which, from a peculiar circumstance, Pistrucci was quite at home—that his gem-taste was initiated. Might one dare to say that he equalled some of his models? It is not possible from photographs to judge of the sculptural relief; but in the gems (40, 125, and 146) the finish is perfect, and the faces are in contour round and fleshy. (40), exhibited this year in Paris, by Phillips, is the property of A. Morrison, Esq.; (146), of Captain H. G. Hamilton,

R.N.; (125), of the author. The Strozzi Augustus (127A)*—one of his studies, now in the British Museum—is most admirable, and the drawing is exquisite; it is surprising that so much is effected with apparently such great ease. The contours of the Minerva and the Bacchus have the roundness of life, and the wreath of the Bacchus is the beautiful work of the artist in the stone; whilst the Augustus has a meretricious jewelled wreath affixed, which cannot well be removed, as the sacrilegious jeweller who placed it there has cut into the gem to attach it.

Pistrucci was "possessed" by a decided *archæomania;* but once, when the author was remonstrating with him upon that weakness, he admitted—according to Horace, whose maxims he used to apply (*mutatis mutandis*) to the art of sculpture—that,

> "Interdum vulgus rectum videt, est ubi peccat
> Si veteres ita miratur laudatque camæos (*poëtas*),
> Ut nihil anteferat, nihil illis comparet; errat:
> Si quædam nimis antique, si pleraque dure
> Scalpere (*dicere*) credit eos, ignave multa fatetur,
> Et sapit et mecum facit et Jove judicat æquo."
>
> The public oft judge wisely; sometimes not,
> If in antique works they can see no fault—
> Find nothing to compare with, naught excel,
> Or even equal,—surely 'tis not well.
> If they confess that some things are too old,
> Too stiff, or slovenly instead of bold,—
> In that there's sense; in that they go with me;
> And then 'fore Jupiter we all agree.

He engraved intaglios and cameos equally well,—though, by preference, most frequently the latter; his skill in the former—besides a few exquisite specimens, in sard and carnelian,

* This old engraving, which is tolerably accurate, does not show the reliefs as well as a photograph; but it gives a better idea of the gem as it was originally, with its classical fillet, than as it is now, with the tawdry jewelled head-dress.

extant—may be estimated by his works for the Mint, all intaglios—the St. George and the Dragon on the coins (129); his coronation medals of George IV. (130 and 131), and Queen Victoria (158); also the medal of the Duke of Wellington (135), having a helmet on the reverse, with an allegorical subject engraved upon it (134). But his Waterloo medal surpasses any work in intaglio, ancient or modern, for invention, execution, and magnitude (143 and 144). It contains as much as thirty ordinary-sized medals, with a combination of allegorical invention and classical composition and grouping, according to the following description, extracted from the *Illustrated London News*, of June 18, 1850 :—

"PISTRUCCI'S LARGE WATERLOO MEDAL.—It seems late now to talk "of the glories of Waterloo . . . However, as a matter of art, a Waterloo "medal, or any medal by such a man as Pistrucci, will always be prized "and command attention. . . . .

"In 1819, the Prince Regent, afterwards George IV., conceived the "idea of commemorating the battle of Waterloo, then the one engrossing "theme in everybody's mouth, by the production of a medal which, for "surpassing magnitude, should typify the great event which, it was con- "sidered, outweighed all previous events of the kind in enduring import- "ance. The Royal Academy being applied to to send in sketches for the "design, Flaxman, the greatest sculptor of modern days, was unanimously "selected by them to fulfil the commission, without any competition "amongst themselves. He prepared a design, which was approved of; "and Signor Pistrucci, who had then but recently been appointed prin- "cipal Engraver to the Royal Mint, was, as a matter of course, commis- "sioned to execute the medal. But the latter gentleman, considering "that his previous works, and the fame they had acquired for him, placed "him above such a task, declined the commission, and refused to execute a "medal from any other design but his own. His cause prevailed; the design "of Flaxman, very beautiful in itself, was cancelled, and M. Pistrucci 'submitted a design of his own, modelled in wax, to the Prince Regent, "which was 'instantly honoured by the fullest and most flattering appro- "bation of Royalty.' Circumstances, however, occurred year after year, "partly attributable to differences of opinion on successive changes of "Ministry, to delay the making of the dies and the production of the "medal; and in the course of various debates and struggles on the sub- "ject, M. Pistrucci was removed from the office of principal Engraver of

"Coins in the Mint—an office which it was held ought not to be filled by "a foreigner—but was retained in the same service as principal Medallist. "M. Pistrucci now retired from his official residence at Tower Hill to a "cottage at Old Windsor, where he worked continuously at the dies, "which were at length completed on the 1st of January, 1849. The medal "measures five inches and a half in diameter, being larger than any that "has hitherto been perfected.

"But circumstances were now changed,—revolution and the tide of "public opinion had swept Waterloo from the historical map of Europe, "and almost expunged it from the itineraries of cockney tourists. It had "been, we are told, the intention of George IV. to have the medal struck "in gold, and to have presented one of them to each of the allied "Sovereigns who contributed to the downfall of Napoleon, and one also "to each of the two great commanders—Wellington and Blucher; "besides medals in silver to lesser dignitaries, and some in bronze for "general purposes. But this intention could now no longer be carried "out: all the allied Sovereigns were dead, as well as most of the lesser "dignitaries; and of the two commanders, Wellington alone survived by "three years the medal which was intended to commemorate his fame. "Moreover, though an impression of the medal 'in soft metal' was at "the time duly placed in the hands of the Lords of the Treasury, for "some reason or other (which common sense would probably suggest) "—a reason unconnected in any way with 'difficulties of routine and "ceremony'—no order has been given to harden the dies and issue the "medal.

"It is under these circumstances that it has been determined to "bring this interesting work of art before the public, and to multiply it "by the electro process; and the Lords of the Treasury have placed the "matrices in the hands of Mr. Johnson, of Alexander Terrace, Bayswater.

"We adopt an authorised description of this medal in preference to "any account of our own. The subject, we are told, of both sides of the "medal is treated allegorically, except the central part of the obverse, "which represents the busts of the four allied Sovereigns, the Prince "Regent, Emperor of Austria, Emperor of Russia, and King of Prussia, "seen grouped together in profile. Around this group of actual portraits "the figures constitute an allegorical and mythological allusion to the "treaty of peace, which was consequent upon the great triumph on the "field of battle. The summit of the surrounding groupings presents "Apollo in his car restoring the day. The rainbow zephyr and Iris "follow the chariot of the sun in succession, but the zephyr is tending "towards the earth, and scattering flowers, as the emblem of peace and "tranquillity. On the opposite side, the car of Apollo is seen closely ap- "proaching the constellation Gemini, personified, as usual, by a pair of "graceful youths, indicating the month in which the great contest took "place. Castor and Pollux, each armed with spears, are intended to

"elucidate the apotheosis of Wellington and Blucher. Themis, the goddess "of Justice, appears on earth, as in the Golden Age. This figure is placed "in front of the profile busts of the Sovereigns, to show that Justice is a "greater security to government than Power. The goddess is seated on "a rock; a palm-tree waves over her head; she is prepared to reward "virtue with its branches in one hand, and in the other holds a sword for "the ready punishment of crime. Power is personified by a robust man "of mature age, bearded, and armed with a club; he is seated under an "oak-tree, and forms the corresponding figure, at the back of the group "of busts of the allied Sovereigns, to that of Justice facing it. Beneath "Themis the Fates are introduced, to indicate that henceforward human "actions will be controlled by Justice alone. These actions and passions "are represented by the Furies, which, being placed beneath the em-"blematical figure of Power, are subjected to its influence, and no longer "suffered to quit the infernal regions, or Cimmerian caverns, in which, "at the base of this side of the medal, the allegory is completed by the "figure of Night, the mother of the Fates, receding into darkness from "the ruling daylight of Phœbus' car on the summit.

"The Reverse.—The central group on this side consists of a couple of "equestrian figures, classically treated, but having the countenances of "Wellington and Blucher. They are full of action; the figure personify-"ing the Hero of Waterloo is galloping in advance, and that of the veteran "Blucher is rushing to the aid of his companion in glory, to complete "the enemy's destruction. They are guided by a female figure of a flying "Victory, placed between them, conducting their horses to the conflict. "Quite detached from this central group, and forming a border round it, "a composition of many figures represents the battle of the Giants. They "are struck down by the thunder of Jupiter; the youngest ones, being "the most daring in the assault of heaven, are the first to receive the "Divine punishment. In their descent they tumble over one another in "every variety of attitude—symbolical of the confusion of the defeated "enemy. The number of the figures of the giants is nineteen, illustra-"tive of the nineteen years' duration of the war; and in grouping these "figures they are represented following each other in succession."

Amongst the collections of intaglios, antique or modern, is there one superior in spirit and execution to the group in the centre of the reverse of the Waterloo medal,—the winged Victory, careering between the two Generals on horseback? Much has been thought of the *front* faces attributed to Dioscorides, such as the Io and Julius Cæsar,—but neither of them surpasses the front face of this Victory; and amongst the

falling giants there are several examples of this excellence: as at the upper part, on the right hand, and at the bottom, directly under the Victory; and again, on the left, opposite the horse's head, there are front faces of ruthless expression and difficult execution.

It may be worth while here to enter into the question of originality in artists. There is great difference between *copying* a painting, sculpture, or gem, and making a *design* of the *same subject.*

There are painters, sculptors, and gem-engravers, who never think of embodying any subject, but are content with copying the works of others. There is, however, great difference between *copying* and *imitating* subjects of high order and classic character. If a man executes a group, to be represented from his own ideas of a subject or event, he must do it so as to tell the story intelligibly, and he must preserve the *conventional likenesses* of the characters,—such as Hercules, Apollo, Mercury, Bacchus, or a Satyr; the features of these he must not invent: but this is not copying; he may and ought to give his own ideas of figure, limbs, action, expression, grouping, &c. For instance, Fauns have always been a favourite subject for sculptors and gem-engravers: (145), by Pistrucci, is in the style of many, but copied from none.

To illustrate this, let us take a subject from Homer, venerated by scholars and artists, and see how his Parting of Hector from his Wife and Child is treated, referring first to the beautiful original, then to some of the poetical imitations, and then to imitations in sculpture and gems.

Ὡς εἰπὼν, οὗ παιδὸς ὀρέξατο φαίδιμος Ἕκτωρ.
Ἄψ δ' ὁ πάϊς πρὸς κόλπον ἐϋζώνοιο τιθήνης
Ἐκλίνθη ἰαχων, πατρὸς φίλου ὄψιν ἀτυχθεὶς,
Ταρβήσας χαλκόν τ', ηδὲ λόφον ἱππιοχαίτην,

Δεινὸν ἀπ' ἀκροτάτης κόρυθος, νεύοντα νόησας·
Ἐκ δὲ γέλασσε πατήρ τε φίλος, καὶ πότνια μήτηρ,
Αυτικ' ἀπὸ κρατὸς κόρυθ' εἵλετο φαίδιμος Ἕκτωρ,
Καὶ τὴν μὲν κατέθηκεν ἐπὶ χθονὶ παμφανόωσαν.
Αὐτὰρ ὅγ' ὃν φίλον υἱὸν ἐπεὶ κύσε, πῆλέ τε χερσιν,
Εἶπεν ἐπευξάμενος Διΐ τ', ἄλλοισί τε θεοῖσι.—ΙΛΙΑΔΟΣ, Z. 466.

"Thus as he spoke, great Hector stretch'd his arms
To take his child; but back the infant shrank,
Crying, and sought his nurse's shelt'ring breast,
Scared by the brazen helm and horsehair plume,
That nodded fearful on the warrior's crest.
Laugh'd the fond parents both, and from his brow
Hector the casque removed, and set it down,
All glitt'ring, on the ground; then kiss'd his child,
And danced him in his arms; then thus to Jove
And to th' Immortals all address'd his prayer."—EARL OF DERBY.

"Thus having spoke, th' illustrious chief of Troy
Stretch'd his fond arms to clasp the lovely boy.
The babe clung crying to his nurse's breast,
Scared at the dazzling helm and nodding crest.
With secret pleasure each fond parent smiled,
And Hector hasted to relieve his child;
The glitt'ring terrors from his brows unbound,
And placed the beaming helmet on the ground;
Then kiss'd the child, and, lifting high in air,
Thus to the gods preferr'd a father's prayer."—POPE.

Longinus, in his Treatise on Sublimity in Writing (ΠΕΡΙ ΥΨΟΥΣ), when drawing comparisons between Homer and Sappho, and other poets, alludes especially to his skill in rendering natural occurrences profoundly interesting, of which the above is a striking example.

Here we have in language what is analogous to the performance of artists. In one a *copy*, a literal translation, exact and beautiful; in the other an *imitation*, or parody, but conveying equally the meaning and sentiments of the great original, Homer.

This same subject is treated by Thorwaldsen in sculpture,

and by Pichler in intaglio. Pichler has selected the first part of the subject, when the child, startled by the helmet, shrinks back from his father to the nurse; the story is truthfully and gracefully told, and the composition of the piece is superior to the other in grouping and invention, on account of the introduction of the horses (11 and 15). Thorwaldsen has represented the second part,—the helmet thrown on the ground, and Hector holding the reconciled child up to Jupiter whilst he makes his short prayer (153). Some are of opinion that in this instance Pichler has surpassed Thorwaldsen; but in other groups the latter stands preëminent. Since Apuleius first narrated the story of Cupid and Psyche, has anything ever equalled Thorwaldsen's delineation of it in the group (7), from the marble bas relief, in size 2 feet 7 inches by 1 foot 7 inches? Several passages from the fable have been sculptured, but none have been better chosen or executed than this, which has often been copied in gems, and is thus described in Nadler's *Künstler Lexicon:* "Sie ist, nach der Eröffnung der verhängnissfollen Büchse, besinnungslos, zu Boden gesunken, und Amor erweckt sie zum Leben und zur ewigen Liebe." Which may be thus freely translated—

Fair Psyche, poisoned by the fatal box,
Cupid arriving, one arm round her locks,
Whilst with the other he an arrow takes,
And with a gentle wound* her spirit wakes
To life, to love, and to immortal bliss,
And seals their union with a heavenly kiss.

Nothing could be more graceful in form and attitude than the figure of Cupid; it embodies the words of the beautiful poetry of Tasso, which describes his adolescence :—

"Umane membre, aspetto uman si finse,
Ma di celeste maestà si compose,

* "Innoxio punctulo suæ sagittæ suscitat."—APULEIUS, *Met.* vi.

Fra giovane, e fanciullo, eta confine
Prese, ed orno di raggi il biondo crine,
Ali bianchi vesti; c' han d' oro le cime,
Infaticabilmente agili, e presto.
O meraviglia! Amor, ch' appena e nato,
Gia grande vola, e gia trionfa armato."

Gerusalemme Liberata, lib. i.

Which means—

The human form and human limbs he took,
But of celestial majesty the look;
'Twixt boy and manhood he the age assumed,
And with bright rays his auburn hair illumed;
His snowy wings outspread, with edge of gold,
Means of untiring agile speed unfold.
Oh, wondrous! Cupid now to life just warm'd
Already soars full grown, and triumphs arm'd.

The description is not the less appropriate, that part of it refers to the angel Gabriel, and part to Cupid.

The mythology and poetry of the early Greeks and Romans furnished, and they still suggest, subjects for the painter, sculptor, and gem-engraver. Ovid is a great contributor to the repertory of artists; and the poets of all ages, and the writers of history and fiction, supply ideal matter, to be embodied on canvas, marbles, or gem-stones. The antique gems were small and scanty in subject; there is, however, a little intaglio, beautifully executed, though it is not three-quarters of an inch long, which has thirteen figures in it, called the "Seal of Michael Angelo" (78), supposed to be an antique, but of doubtful date.

It is only during and since the cinquecento that engravers have had the power of producing good works in gems of large size, with any amount of grouping—especially in cameo—such as the Death of Julius Cæsar, or the Parting of Hector and Andromache (15).

Many collectors and connoisseurs think they can distinguish true from false antiques; but that cannot always be done by

even the most skilful engravers — who would tell them so, if they were on sufficiently intimate terms to admit them into their confidence. How is it possible for a connoisseur, who has never touched an engraving tool, or perhaps never seen one used, to decide whether an engraving be an original antique, or one perfectly imitated, when the best engravers on record—such as Natter, Pichler, and Sirletti—could not distinguish each other's works from the antique? besides which, there are living engravers who have imitated the antique so as not to be suspected; as, for instance, where the incautious workman of a jeweller has broken an antique intaglio in setting it, and it has been replaced by S— or W— for the jeweller, at a very moderate cost. These are facts which reach the amateur, not the connoisseur collector. To show how unable the most skilled engravers are to decide, it is worth while to relate that the antique intaglio gem (142)—a Satyr and Nymph—was shown by the author to one of our best engravers, a pupil of that Tassie who made glass-paste copies of almost all the celebrated gems extant. He said immediately: "That is one of our pastes." "Indeed! but examine it." (Having done so, with a powerful lens): "Yes, it is." "But it is well polished in the work, and has marks of wear outside." "Yes, that we call fire-gloss." "Indeed! but you can mark a paste on the edge with a file, or on the face with a gun-flint." "Yes." "Well, try it" (handing him a gun-flint, which is carried in the pocket for the purpose; but it was not to be scratched). "Why, really, it is a stone!" And, really, the author "guesses" that it is the identical gem—Nymph and Satyr—from which Tassie's paste was moulded. So much for discrimination! (48) is a cameo of the best class; no connoisseur or artist would doubt its being antique: it is engraved upon an Oriental sardonyx of three strata, the uppermost light-brown sard; the subject—Œdipus

consulting the Sphynx, mounted on a rock. The figures are perfect, as to drawing and execution; the table shows the inequalities already spoken of in a marked degree: evincing its being cut, at least in part, by the adamant-points, previous to the engraving engine having been exclusively adopted; which inequalities, however, have not prevented the polish being very high and antique-like. Yet, after all, no human intelligence could decide whether it was engraved 1800 or 300, 100 or 50, years ago; or, in other words, whether it be antique, cinquecento, or last century, by Pichler, Natter, or Sirletti, or even later—made since the commencement of this century—by Odelli, as it is very much in his style. (83) is an intaglio, *en cabochon*, with a common antique subject,—the Egyptian griffin, with its paw upon a wheel of four spokes; the stone (a sardonyx) is of the Nile Oriental character,—that is, less decided in its white and brown than those of the Indus; it has never been polished by a lapidary, but has the natural gloss acquired by friction for ages in the sand and gravel in the bed of the river,* with minute dots produced by the percussion of its neighbours.† The back of the stone is not polished, merely smoothed after being slit, and having a couple of marks of the slitting tool not quite effaced, as sometimes happens with Oriental lapidaries, and as seen on antiques; all the engraving has been well polished. This gem has been shown, for their opinion, to at least a dozen as competent judges as are usually met with,—including connoisseurs, a couple of experienced dealers in gems, and two clever Italian engravers; all of whom, after close examination, have decided

* The Oriental onyx and sardonyx pebbles, in their natural state, have a high gloss upon them.

† There is a similar gem (larger) in the Payne-Knight portion of the British Museum, but it has been spoiled by having the surface ground all over, by which the natural polish has been changed.

in favour of its antiquity: one of the dealers, looking at it carelessly, said hastily that he thought it a modern crest; but when he investigated its shape, *en cabochon*, the four-spoked wheel,—which he had taken for an heraldic shield,—and its being highly polished to the very end of the tail, his opinion varied from a "modern crest" to a "valuable antique." One of the latest persons, however, to whom it was shown (the distinguished archæologist, Mr. Newton) * threw a damning doubt upon its antiquity, by pointing out the fact that the polish of the engraving seemed too "glistening." There are very few connoisseurs who would have thought it "too good to be true," but he was right; the stone was slit from its parent sardonyx pebble of the Nile (see page 69) by Cuttell, in New Compton Street, under the direction of the author, in the year 1866, and engraved by Wilson, of Leicester Place, from an impression of an antique.

Taking the hint from Mr. Newton's criticism, this fault, which had been overlooked, was remedied in a few minutes by a bit of boxwood and diamond-dust; not taking off the polish, but removing the glistening appearance, and communicating to it the mystical haze so much depended on by Mr. King as "the truest test of antiquity, like the mist produced by "breathing on a polished surface, which the lapse of ages has "always cast upon the high lustre of the interior of the intaglio." He little thought how quickly and easily the forger of antiques can produce the "mist." This cannot be done directly in the first instance; the polish must be given first,

* Charles T. Newton, Esq., M.A., Keeper of the Greek and Roman Antiquities in the British Museum; whose talents are equalled only by his modesty, and to whose intelligence and activity we are mainly indebted for the late acquisition of the Blacas Collection,—and, before that, of the valuable Halicarnassian marbles, the frieze of which is perhaps the most beautiful specimen of that kind of sculpture which has been rescued and brought to England.

and then dulled. The surface of the gem now looks as hazy as a misty morning in November, with the gloss of the sun shining through; and would perhaps deceive even Mr. King himself, as well as it did the other practised connoisseurs. It is a curious coincidence, that the jeweller in setting the gem chipped a small piece out of the edge of the stone, which is a wonderful addition to its air of antiquity. (See page 82, line 26.)

The generality of collectors are not acquainted with the mineralogy * and chemistry of gems, and the statements which have appeared in print, in various works, for some years, are most erroneous. In one book it is said that, "if a red sard be "placed on a hot iron, the surface will be turned white to the "depth required for a cameo;" which means, in fact, that the red sard will be converted into a red and white sardonyx. No statement can be more absurd, and it could arise only from ignorance of the true nature of sards and carnelians, and of the methods of staining, or colouring, or whitening them, and also, perhaps, from misunderstanding certain red stones found amongst other antiquities, with a layer of white on the surface, which has been produced by the ingenuity of the cinquecento lapidaries, if not earlier; for we know that, at the time of the Roman Empire, skill in working glass, or enamels, had arrived at great perfection. And the misconception of those who

* In this respect, Mr. N. S. Maskelyne, M.A., F.R.S., Professor of Mineralogy at Oxford, and Keeper of the Mineral Department, British Museum, has a decided advantage; he possesses love, taste, and feeling for art, and his knowledge of gem-stones greatly assists his powers of discrimination. It was mentioned above, at page 4, how well gems are displayed in the Continental museums, by being hung up against the light; but Mr. Maskelyne has literally eclipsed them, thrown them all in the shade, by his invention, a looking-glass behind the gems, which gives an intensity of light quite charming. Intaglios, however, profit chiefly by this arrangement; cameos require to be viewed with the light upon them, not through them. As Mr. M. is also a scientific chemist, we may hope that he will hereafter throw some light upon the cause of colour in jewels.

think that carnelian can be whitened by heat in its substance, at the surface, has arisen from *carnelians* having been *coated* with white glass, or enamel: as may be proved by scratching the white glass with a flint, which cannot mark the carnelian. There are imitations of cameos found, done in a similar manner by an ingenious process of the East Indians; who make a compound of powdered flint (or glass?), mixed with white-lead, alkali, and the slimy juice of a plant, to the consistence of cream; with this they paint some subject on the surface of a carnelian, and then heat it in the fire; by which means the white figures are melted into glass, and, at the same time, the surface of the carnelian being slightly converted, where touched by the alkali, is indelibly amalgamated with the glassy figures. Red sards, or carnelians, could not be "*turned white*" to a *limited* depth, at the surface; for the degree of heat that could change red to white must calcine and destroy the stones. The process of making *white carnelian* from *gray* chalcedony (page 70) could not by any management be made to stop short at the surface, but must whiten the stone all through; and, besides, *white* carnelian cannot be made from *red*.

In more than one work it is stated that the only difference between *staining* black and red is, that, "after boiling the "stone in honey and water, the *black* is effected by sulphuric "acid, the red by *nitric* acid;" without any mention of the iron to be used with nitric acid to produce red: as if nitric acid could make a stone red, after being merely soaked in honey, without iron! besides which (see page 58), no honey is used in staining red. In one of the most recently published works on jewels and gems, after giving a statement of the common and established method of staining black, by oil, or honey, or syrup, and sulphuric acid, the author proceeds to say: "For *red*, *protosulphate* of iron is *added*, thereby leaving

the iron in the form of an oxide." This is contrary to the fact, and to the laws of chemistry, for no oxide could be left from protosulphate of iron by either oil, honey, syrup, or sulphuric acid, either separately or united; so that he does not explain how a stone is to be stained red. He also states: "For the *deep-blue* colour sometimes seen in onyxes, *yellow* "prussiate of potash (ferrocyanide of potassium) is added to "the *proto*sulphate of iron." This also is erroneous: the *yellow* prussiate of potash (ferrocyanide of potassium) would not produce a "*deep* blue" with the protosulphate of iron, but a bluish gray.

In one place we read that "sards suffer from contact with oil;" whereas, the finest sard might be soaked in oil for a year without detriment; they are, in fact, covered with oil whilst being engraved. Again, we are told that "*copper* wheels (rotine) are used for engraving;" whereas, they are only used occasionally, for polishing minute work (see page 20), all the gem-engraving in Italy, France, England, &c., being done by *iron* wheels (rotine). To see copper wheels used, our informant must have visited Gulliver's Flying Island, or some such outlandish place; where, perhaps, he also learned that "The "larger and deeper hollows (of gems) are *still* sunk by means "of a round-pointed *drill* (!), substituted for the cutting-disk "(wheel), and acting just as the ancient drill." Any engraver who reads that will think it rather funny; a connoisseur might possibly swallow it, if he had never visited a gem-engraver's studio.

Lest it should appear to the reader that the author has been unnecessarily minute on the subject of staining onyxes, he will confess that he is desirous to instruct the engravers. The knowledge of these various processes of staining and improving the appearance of onyxes would be of great use to gem-engravers; and even in Italy little is known beyond the

common method of staining black; the mode of "withdrawing," or making paler, by nitric acid; and the bleaching effect of cold sulphuric acid on the white. The necessity for an artist to understand the process is, that very often the lapidary does not stain the (originally gray) onyx half through, and when the engraver has cut down through the white layer to the table, he finds it gray instead of a good brown or black, or a good red, as it appears on the under surface; and if he does not know how to re-stain the table, his labour is lost, and also the money he paid for the stone; whereas, with the instructions above given he can produce the required colour. The artist may have a fine stone which would answer for a particular order, if it were not red, instead of the required black, or *vice versâ;* now, by the directions given, he can blacken a red stone, or he may abstract the black from a stone, and then dye it red to suit his purpose, which has not hitherto been done by any lapidary. A section of a gray onyx, with circular concentric layers, has been stained black on one side (98), and red on the other, by the methods described, immersing one side at a time in a shallow quantity of the staining fluid.

Some curious specimens of stones stained with inscriptions, *not visible until held up to the light,* have been brought from the East, about which various accounts are given, as, for instance, that they were for the purpose of secret communications; but this is out of the question, as the difficulty and delay of executing them would preclude their being so employed, and they must have been made merely as an ingenious matter of mystification. One of these, a very beautiful dark-brown, Oriental-looking sard, was shown to the author, with an inscription, *not visible till held up to the light,* of barbarous words in low Greek characters, with a challenge to explain the execution: see (140)—the appearance *when*

held up to the light. Within a week the author produced a similar stone with the word εὕρηκα ("I have found it out") legible *when held to the light*, as (141), but not otherwise, executed by the following process: A gray chalcedony was engraved with the letters, about a quarter of a line deep; the stone was then stained brown, and then ground down to the level of the letters, so as to efface the engraving; but in their place the letters were legible, their stain being deeper than the surface ground off; the stone was then re-stained brown, the letters receiving a *little additional* darkening, so as to be visible when held up to the light, though invisible in the hand.

The production of the concealed letters might, with some management, and the selection of a fitting stone, be effected in a different manner, thus: The chalcedony being stained a *moderately* deep brown colour, but *thoroughly*, up to that point that boiling it in sulphuric acid could not make it darker, it should be covered with a thin coating of white wax; the letters should then be traced in the wax, carefully, *down to* the stone; the stone must then be soaked in honey or syrup for a week or so; then cleared from wax, and boiled in sulphuric acid, which will darken the stone where the letters were traced,—but it must be taken out and examined from time to time, so as not to make them *too black*, or they would be visible without being held to the light.

Figures, however, are stained in chalcedony by the kind of etching process just mentioned, but more simply when they are intended to be visible; as, for instance, imitations of Mocha stones, mentioned at page 41. A piece of pale chalcedony, of the desired colour, can be etched by wax, honey, and sulphuric acid, so as to produce the appearance of moss-leaves (Mocha stones), or, if drawn upon carefully, by nitrate of silver, marking-ink, or even steel-pen ink which contains

cobalt, if the drawing be retouched frequently; but these are easily detected, being quite superficial, whereas the ramifications of the true Mochas are seen to dip obliquely, and sometimes even to pass quite through the stone (see page 41).

There is a curious specimen of stained sard in the possession of the author: a snuff-box of real Oriental sard, containing, apparently, the organic remains of a fish in the top part, and of another in the bottom (174). This box was considered, sixty years ago,* to be the greatest curiosity in the collection of a celebrated connoisseur, and would have been invaluable if real, which it is not, being geologically an impossibility. Shells are found converted into flint (chalcedony, which sard is); but any soft organic matter, like fish, worms, or caterpillars, would dissolve and float away long before any siliceous impression could be left; it is only in calcareous and sedimentary stones that such things could be found. This box was presented to the late Sir George Smart, by the Duchess Dowager of Hamilton, and bequeathed by him to the author.

Another deceptive specimen, though a real *lusus naturæ*, is a German jasper-agate, from Idar, with the exact appearance of a nest of caterpillars petrified, the joints of their bodies visible, and two of them having even the semblance of antennæ on the head (179); yet every experienced geologist will decide at once, *à priori*, that the thing is impossible; and, in fact, under the microscope, the show of organized matter dwindles into mere elongated stripes of stalagmitic deposit.

In one book, the *dirty* soft stuff, mentioned at page 19, used for taking the impressions in intaglio-cutting, is called

* The author was then studying geology *à tâtons*, under Jameson, when the paper war was carried on between Werner and Hutton, as to whether the strata of the world were formed by fire or by water, and many of the phenomena of mountains were attributed to the Deluge! This was before the immortal Murchison gave us the key to geology—the SILURIAN SYSTEM.

"modelling wax," whereas modelling wax is made of *pure* white wax, rendered still whiter and opaque by either white lead or bismuth, as described at page 76.

Modern artists are infinitely indebted to Prince Poniatowsky and to Pistrucci: to the first, for showing that living artists could execute work equal to the ancients; and to the latter, for proving, moreover, that they could not be distinguished, and that a talented artist could earn more by fine works signed with his own name, than by forging antiques. Pistrucci's prices were, for single heads (portraits), according to the size and trouble of the accessories, from 50 to 150 guineas; for fancy heads and groups, from 100 to 300 guineas and upwards. For instance:

The George and Dragon (129), engraved on jasper as a model for the first sovereign coined, 100 guineas.

Head of Medusa (40), jasper, 200 guineas.

Force subdued by Love and Beauty (124), sardonyx cameo, 200 guineas.

Young Bacchus (125), carnelian-onyx cameo, 300 guineas. This Bacchus is one of his finest and most difficult works; the vine-leaves are raised up from the head, the ear being carved out under one of them.

Leda and Swan, cameo, 200 guineas.

Order of St. Andrew, the figure standing behind the cross, with the motto of the order, NEMO ME IMPUNE LACESSIT, round the margin, sardonyx cameo, 350 guineas.

The large Minerva cameo (146), nearly four inches long, on Oriental pale chalcedony onyx, 500 guineas.

We have Mr. King's authority for stating that Pistrucci made the large cameo of Augustus and Livia to order for 800 guineas.

Payne-Knight paid to a dealer £500 sterling for the Flora

(121), Pistrucci's work, without any name upon it, merely from seeing its excellence, and mistaking it for antique.

For the cameo *copy* of the Liris Bronze (6), Pistrucci received 250 guineas, which, had it been his own original design, he would have estimated at 350.

For engraving the obverse of a medal, his price was 100 guineas; so that for the Waterloo Medal, calculated to contain the work of thirty medals, he received £3,500 sterling.

It will be perhaps interesting to the reader to give, in his own words, an account of some of the leading circumstances of the life of this remarkable man, Pistrucci, extracted from his unpublished autobiography, some passages of which remind one of Benvenuto Cellini, whom he resembled in talents, though a far different and superior character (for which, *vide* APPENDIX). This sketch will elucidate to the connoisseur some of the mystifications of the dealers, and be highly instructive and encouraging to artists, who will learn that by the honourable exercise of skill, without any trickery whatever, "his success, as far as pecuniary remuneration is concerned, "far exceeded the wildest dreams of any gem-engraver of pre-"vious ages." *

All admirers of engraved gems must feel grateful to Mr. King for his book, *Antique Gems*. He has worked out a most obscure and difficult subject with skill and perseverance, aided by great erudition, and communicated to the public the result of his experience.† He supplies us with many details about the forgeries of antiques. A few of the real antiques, and only a few of them, were originally found,

* *Antique Gems*. By Rev. C. W. King, M.A., &c. 1860.

† Having acknowledged thus much, and having frequently quoted this author, it may seem ungracious often to be obliged to differ from him on practical points; but the excuse to be offered is the oft-repeated—"Amicus Plato, amicus King, sed magis amica veritas."

with an inscription on them at the side of the subject, such as ΑΥΛΟΥ, or ΑΓΝΙΟΥ, &c.; of course, the forgers of antique gems, to increase the appearance of authenticity, frequently added these signatures; and though there exist thousands of such imitations, Mr. King tells us that Koehler boldly asserts that there are but four gems in existence bearing the indubitable signature of the engraver. He says, however, that an archæologist of the greatest experience is of opinion that the number might extend to sixty. He himself thinks that, in all the collections of Europe taken together, there are certainly not a hundred gems inscribed with the genuine name of the author. In the Poniatowsky Collection alone there were from seven to eight hundred of these forgeries. Considering the number of antique names that Poniatowsky caused to be forged, it is surprising that he did not go to the fountain-head, and inscribe the name of the earliest gem-engraver on record, בְּצַלְאֵל—Bezaleel (Exodus xxxi. 2 and 5). It is necessary only to look into Brunn's *Geschichte der Griechischen Künstler*, to be satisfied of the deception of the names forged upon gems. Prince Poniatowsky had, according to Mr. King, inherited about one hundred and fifty gems,—good, bad, and indifferent. He had the good taste to employ modern artists of his time of consummate skill—Pichler, Girometti, Sirletti, Cerbara, &c.—to execute beautiful gems in *the style* of the antique; but, then, he had the folly to employ an engraver to forge upon them the names of ancient artists; thereby diminishing instead of increasing their value. Nay, so great was the reaction, that really valuable antique gems were depreciated, by being found in this suspicious company, to such a degree, that the head of Io,—believed to be engraved by Dioscorides,—which last century was estimated at a thousand pounds sterling, was sold for seventeen at the sale by auction.

Between the gems which the Prince had inherited, and those purchased and made to order as above described, it is said that his collection amounted to above three thousand; and when these came to be sold, there was such a glut in the market, that purchasers seem never to have recovered an appetite for intaglios,—that is, beautiful ones; the ugly old antiques have still a fictitious value. There is, however, another version of the story of the Poniatowsky forgeries current in Rome: that the Prince being a liberal, if not extravagant, purchaser of antiques, his *major-domo* introduced to him, from time to time, a person who had a fine "antique" to dispose of; whether he was interested in the negotiation or not, remains doubtful. One thing is remarkable, however: that the names on the gems have so much the appearance of the same handiwork, that it would support the assertion that they were all inscribed by one person, as before mentioned. In fine, the names on gems are utterly unworthy of attention. It is a *tolerably well received opinion*, that some of the names on gems may be those of the author; some—especially of the very old ones,—of the deity, or person, or other subject engraved; and on many, the name of the proprietor.

If connoisseurs who are fond of gems would trust to their own eyes and taste, and purchase only what is beautiful—whether antique or modern—it would bring things to a just value; but under the present system, ordinary work has been over-estimated, if supposed to be antique, and beautiful work underrated, if known to be modern. A beautiful intaglio of Pichler's, with a Greek name of an ancient artist forged upon it, which was originally made for Poniatowsky for perhaps twenty or thirty pounds, will not fetch now more than as many shillings, because it is not really antique,—though a work of the same Pichler, genuine, with his own name on it, will fetch, as it deserves, the price in pounds sterling,

although no better than the other, which, though depreciated by the forged name, is quite as good, and, if bought for its real merit, worth quite as much: so far does prejudice outweigh judgment. It is quite possible, however, that there may be a reaction, and the beautiful Poniatowsky intaglios may be estimated and sought for when it is too late,—for they are now dispersed and despised. A few persons of taste have retained some of them: many were of a large size (more than two inches long), upon beautiful carnelians, sards, jacynths, &c., and, like (16 and 17), set as lockets, in richly devised gold frames, forming tasteful ornaments; yet most of these were purchased at the sale by auction, by brokers, &c., for the value of the gold merely (fifteen to fifty shillings each), and torn from the exquisite settings, which were melted as old gold, though any one of them would have been a handsome and acceptable present to a lady.

When it is recollected that the engravers of these Poniatowsky gems were the best artists of the day, it is no wonder if they are found, on examination, to be very good. They are none of them *copies*, of course, or they could not have been put forward as originals, with forged Greek names upon them; but they are imitations of the ancient masters: some are *inventions*, as (16), Mercury overcoming one of the rebellious Titans. The figure of Mercury is grand, bold, and finely executed; so is the Titan—a conventional figure—the composition reminding us of the nearly contemporary marble group, by Canova, of Theseus slaying a Centaur, copied in intaglio (30). The other group, apparently a Greco-Egyptian subject, a meeting between Saturn and the tree-goddess Neïth (17), is graceful and spirited.

We do not find fault with the painter or sculptor of the present day whose works are suggestive of Raphael, Carlo Dolce, or Guido, or of the authors of the Apollo, Venus, or the

Aristides (147)—of whose drapery we are reminded by some of the works of Lough—emulations of excellence, but not copies. If the nature of gems and engraving were better understood, it would diminish the mania for purchasing inferior works and forgeries as antiques, to the detriment of the genuine gem-engraver; the dealers having always made a harvest by the ignorance of their customers as to the real nature of the stones, or the work cut upon them, little being necessary for successful imposition beyond bold and impudent assertions, and pretence of knowledge; if it had been otherwise, would a notorious foreign dealer have been permitted, at the Exhibition of 1851, to send in cameos, and particularise some of them in the Catalogue as "Oriental stones," which were Brazilian and German, and execrably engraved withal? Two of them, a Leda and Swan, and a copy of the Muse in the Neapolitan Museum, are on fine onyxes of a large size, of which the stones were worth more before they were cut than they now are as cameos, after being spoiled by bad engraving.

It would surprise any uninitiated person to be told of the thousands of little, ugly intaglio seals that are hoarded by collectors, or lodged in the drawers of museums, in unobtrusive repose, there to remain, unless scattered by a sale or some political storm, such as the French Revolution, when the gems of the Louvre, bad as well as good, were carried off as plunder. As for the collections of private individuals, they do not long hold together, seldom beyond a third generation, when they are presented to national institutions, or, being brought to the hammer, gratify new possessors. We have only to mention some of the most celebrated: the Marlborough and Devonshire still exist; the Strozzi, merged into the Blacas, has now descended with it to the British Museum; the Pulsky, Roger, Prawn, Payne-Knight, Cracherode, Hope,

Demidoff, Townley, Poniatowsky, Percy, Beckford, Besborough, Uzielli, Webb, and last, but not least, Hertz, are broken up.

Hertz can scarcely be reckoned a connoisseur collector; he was the most extensive dealer known, and purchased everything that came in his way, from the price of sixpence to that of hundreds of pounds, provided his quick judgment perceived a chance of profit; and when tired of the trading process, he sent his collection to the auctioneer's hammer.

But the study and knowledge of gems in this country is confined to a very few, who are mostly rich connoisseurs; the artists neither know nor care anything about them; and though every respectable gem-engraver has a clear comprehension of painting and sculpture, you will find scarcely any painter or sculptor who knows the difference between *pietra dura* and shell, unless he has been in Rome, and not always even then. When the author tried to instil into a late President of the Royal Academy a desire to promote the knowledge of gems, he found that the President knew nothing about them, beyond having bought in Rome, like other "John Bulls on the Grand Tour," a few boxes of common plaster impressions of intaglios.

Many, very many, intaglios are handsome, and worth possessing, as (147, 148, and 149); but what pleasure can there be in contemplating or owning such things as (150, or 142)?—the last, a genuine Greek antique; but kept and valued by the author only on account of its donor,—the other well known, and considered as Greco-Italian of the best style. Such are curiosities, and valuable in a collection only for the purpose of showing the progress of art, by contrasting them with the works of Pichler, Santarelli, Sirletti, Berini, Coldorè, Natter, and other Italian, French, and German engravers; or with those of our own Brown, Birch,

Marchant, down to Wilson, Wyon, and other London engravers. Notwithstanding a very authoritative and sweeping assertion to the contrary, we have still many excellent *living* gem-engravers, both of intaglios and cameos, in *pietra dura*. Amongst the latter, Angelici, Neri (33), the two Pistruccis (139, 154, 111, and 168)—see page 76—and others, in Rome; in Florence, Bassi, &c.: besides him, those in Milan and other Italian cities; Arsene, Gaetano Lupi, and other Italians, and Paul Lebas, a Frenchman, in Paris (160 and 127[127]); Brett, one of the few Englishmen who engrave cameos (42[42]), and Luigi Isler, a Roman, in London (110[110], 165[165], 165A[165a], 171[171], 170[170], and 177[177]); besides those in the German and Russian cities, and elsewhere.

Amongst the rubbish, you meet with, here and there, a little beauty, engraved by some of the more modern artists;

[160] The Emperor Napoleon III.

[127] Cast from an engraved fancy head.

[42] Norma, bloodstone onyx. Not Grisi, but an amateur lady singer.

[110] Portrait of a Parsee.

[165] A modern version of Perseus with the head of Medusa—worn as we see the head of the lion's skin on Hercules or Omphale; see (165A and 37)—cameo, sardonyx.

[165a] Omphale dressed in the lion's skin, on a sardonyx of five strata; the artist has cleverly adapted one thin white layer to represent the teeth of the lion.

[171] Achilles, translucent Oriental chalcedonyx. It is not surprising that Achilles, who was the youngest and handsomest of the Greek chieftains at the siege of Troy, should have passed for one of the daughters of Lycomedes, especially when his long tresses were dressed like theirs; that is, carefully braided up close to the head—the fashion with the Greek women—see (3 and 25). He and his young rival in beauty, Diomede, are always represented without beards, looking rather effeminate, which appearance is increased to us by the flowing hair of the Greek men (*καρηκομόωντες Ἀχαιοί*). Minerva (146), who was a rather "strong-minded female," with her helmet, though her hair is confined, looks almost as masculine as Achilles.

[170] Chloe, see page 92, carnelian-coloured sardonyx.

[177] Judith, before she slew Holofernes, "braided the hair of her head, and put on a tire upon it" (Judith x. 3). Cameo, chalcedonyx.

and which, even if it have been scratched, you can, if skilled, see at once to be modern, both in the lapidary work of the stone, and in the engraving; yet these also are barefacedly offered by the dealers as "genuine antiques" on "Oriental stones." This is not always an intentional deception; many of them know no better, and are surprised if one smiles incredulously at their assertions. However, if there be so little difference as not to be generally recognisable, why not buy a beautiful thing for what it is worth, whether antique or modern, and whether the stone be Oriental, or Occidental, or German?

The author hopes he may not be misunderstood, and, because he has an admiration of living talent (*καινόμανία*), be considered a heretic as to antiquity. On the contrary, like his old friend Pistrucci, he worships the *exemplaria Græca*, when they are beautiful and genuine; that is, if they can be proved to be genuine; but, whether they can or not, if they are beautiful. He bends the knee to the Apollo Belvedere, the Laocoon, the Laughing Faun, and other ancient sculptures and bronzes; but he can equally admire beautiful modern works. He could look for hours on the Io, or the Diomede, said to be antique works by Dioscorides, and on, perhaps, a hundred—but there are not a thousand—other such, and is never weary of contemplating the beautiful Greek* coins, such as (26 and 25); but he can criticise antique gems as independently as the worshippers of antique criticise modern

* These beautiful records of ancient art under the care and direction of William Sandys Wright Vaux, Esq., M.A., so well known for his urbanity in promoting the information and convenience of the public; the author of *Nineveh and Persepolis—Historical Sketch of Ancient Assyria and Persia* —and many valuable memoirs in the Transactions of Literary Societies; and who, under the humble title of *Handbook of the British Museum*, produced a work containing more profound erudition than any other work of much larger size and pretensions.

gems. A genuine archæomaniac will scarcely condescend to cast a look upon such gems as (40, 125, 146, 165, 171, 170, or 44); or, if he does, it is only with microscopic eye, to search for defects, for which he will hear no defence. It is interesting to watch one of these infallible judges in such a case. When the gem is put into his hand, he looks inquiringly under his eyebrows, asking—"Is this an antique?" although, at the first glance, he might see—either from the nature of the stone, or some other circumstance—that it could be no such thing. When answered in the negative, he either says, "Very pretty," or "Not bad," shuts the case, and hands it back at once; or if not, it is only to look into it critically, finding fault with something about the ala or point of the nose, the nostril, or a corner of the eyebrow, the upper lip, lower lip, or chin, or the border or opening of the ear, or the hair; all of which, being mere matter of taste, is, therefore, *non disputandum;* and more particularly as perhaps the next admirer of gems to whom it is shown instantly selects the objectionable nose or hair as being especially beautiful to *his taste.* Even if he does not, or cannot, "pick a hole" in the work, he will not be foiled, but finds some slight natural blemish in the exquisite onyx or sardonyx; which is equivalent to a person viewing a *capo d' opera* of Canova, Gibson, or Schwanthaler, and pointing out one of the little usual gray blemishes in the marble. Is that taste? If any one hints at a defect in an antique, whether sculpture or gem, a volume of excuses is ready. If it be a bas relief or statue, which has a leg or arm too long or too short, it is because, "at a certain elevation, that suits the eye." If an antique gem be "as ugly as sin," it is because it was made to suit some conventional ideas of the period (?), and so forth; as (178), a well-known antique Medusa, and others like it; or one of the Blacas Medusas, on a large piece of veiny, cloudy,

coarse amethyst,* $2\frac{1}{2}$ inches by 2 inches (not good enough to rank as a jewel), and apparently an imitation of the well-known gem (175) from the Odeschalchi Collection, on an agate,—a face of commonplace ugliness, which has not the piquancy of (178), that reminds one of the grimaces of Joey Grimaldi or subsequent clowns. An ancient marble bas relief of Medusa, in the Villa Albani, resembling (40), is beautiful,—and there is a fine cameo gem somewhere, mentioned by Lippert, ii. 26, copied from it; there are also some beautiful profile intaglio Medusas, like (180), not modern work (except one of Marchant's), though not archaic, perhaps ("medio tutissimus") cinquecento. How does it happen that a really good judge of the beautiful in antiques cannot spare a moment to admire modern beauty? He can admire the Medusa* (180), because it is believed to be antique, and so can the author, because it is beautiful, whether antique or not, and corresponds with Ovid's lines, descriptive of her—

"Clarissima formâ,
Multorumque fuit spes invidiosa procorum
Illa; nec in totâ conspectior ulla capillis
Pars fuit. * * * *
Gorgoneum turpes crinem mutavit in hydros."

Which may be rendered—

Splendid in form, her beauty lighted hope
Of envied crowds of suitors: none could cope,
Midst all her charms, with her attractive locks.
* * * * * *
Changed her fine tresses to repulsive snakes.

But it is nowhere asserted that her features were debased, as in some of the ugly gems just alluded to (178), &c. This fine gem (which is in the same case with some of the others mentioned) is on a stone not often employed for the purpose,—

* In the Blacas Collection, British Museum.

an agate,—which, having been cracked, has for support been cemented to another stone; but this being quite opaque, it produces a very bad effect. The same subject is treated with *beauty* (40), by a modern artist, all whose sympathies and ideas were with the Greek, and of this gem it might be said, "Oh, what a deal of pain looks beautiful upon that brow!" pain producing a frown resembling "scorn." Why is an ugly antique, or reputed antique Medusa, preferable to a handsome modern one? The author confesses his inability to grasp the idea.

A connoisseur, of considerable taste and judgment, was shown the real antique gem, Nymph and Satyr (142), which he admired extremely, though the owner does not; he was then shown (165, 170, 125, 165A), and others; each of which he contemplated for a moment and praised, but after each returned to his pet Hottentot Venus (142), which he held in his hand all the time he was in the room; lastly, the factitious Egyptian Griffin (83) was presented for his opinion, and it proved a dangerous rival to the Nymph and Satyr: being asked his opinion as to its age, after careful investigation, he decided that it was antique, and indubitably older than his favourite! (See page 109, line 15.)

Let any one visit the cabinet of a connoisseur collector of six or seven years' standing, and see the rubbish which he has been collecting, called antiques,* with usually a fair sprinkling of Poniatowskys, at frightful expenditure; though he will not afford a moderate price for a beautiful work by a living artist. As time goes on, he keeps "weeding" out what he bought at first, as he acquires sufficient experience to be conscious of their worthlessness. If these collectors would cultivate and consult

* Many of them being really antiques, but common work, made for the million, as at the present day (see page 77, line 13), and though antique, not good either in design or execution.

good artists, they would be saved from being so often "sold" by the dealers.

The art still labours under great difficulties in this country, because the veil has been only partially removed from the eyes of collectors; but that will eventually have a good effect. The universal tendency to exclusiveness, which has made a man, before now, pay a large sum for the only existing copy of a child's penny book, or of a play-bill, &c., long kept up a fictitious value in the market; but the idol is fallen down and broken, and the worshippers are disheartened. Whilst men were following the *ignis fatuus* of an antique *beau idéal*, they constantly stumbled over specimens of genuine, clever, modern workmanship, which their natural taste made them admire and purchase, even if not called antiques; but there is not yet any steady demand for modern fine art in this line, though anything beautiful and excellent must eventually succeed.

The studio of the gem-engraver, as well as of the sculptor and painter, on the Continent, is frequently the rendezvous of persons of taste among the rich and noble; here, in England, his studio is little known except to his commercial employers.

For many years, the jewellers' shops have been deluged with trumpery cheap cameos, both in *pietra dura* and shell, mounted for brooches in inferior gold, and sold to the million; but no connoisseur has his taste affected by such rubbish, any more than a lover of paintings would be diverted from his estimation of the art by seeing the ill-coloured prints or paintings in a country inn or elsewhere.

Besides the gems, which have been described above, in stones of different kinds (*pietra dura*), and the engravings on shells, imitations have been made in *glass*, or enamel, called "*paste*," from the time of the Romans, who excelled in making glass of all colours, and in imitating jewels, and carnelian, and other gem-stones. Intaglios have been imitated

in coloured glass so as to be scarcely distinguishable, except by trying whether a flint will scratch them, as it cannot mark real carnelian (see page 107). There are many of these *antique pastes*, which are *supposed* to be the casts of *antique intaglios* which have been *lost*, and which are only known *to have existed* by these impressions of them in coloured glass "paste;" but, after all, this may be but one of the myths of collectors, as any or all of these may have been *originals cast* from *wax* models and not from any *gems*. Many imitations of cameos for jewelry are thus made, both in Rome, Paris, and other parts of the Continent; and Tassie, of Leicester Square, and his successor, Wilson, have produced beautiful works of this kind, both in intaglio and imitation cameo; the white of the cameo being cast in opaque white glass, like the white of an onyx, and stuck upon a ground of glass, either black, red, or other colour, by Indian glue (*gomme de bouche*), or Canada balsam. In this way, *portraits* are cast from *wax* models. When the likeness has been taken by the artist in wax (126), on a slate or glass, as described at page 75, this is cast in opaque white-glass enamel, and either kept like a miniature white marble bas relief (116), or the white table ground off at the back, and its place supplied by a dark glass, or slab of carnelian, so as to make an artificial cameo portrait, like (126); which may be either set as a jewelry ornament, or kept in a case, or an engraved stone cameo may be copied from the wax model, as (154).

"Paste" is glass of different colours, made from pure flint-sand (called "silver sand"), or powdered rock-crystal, or quartz. When paste is pure, and without any colour, it is used to make artificial diamonds. For imitating emeralds, rubies, sapphires, garnets, carnelians, &c., the paste is tinted by the oxides or rust of metals,—such as iron, manganese, cobalt, &c.

To copy a gem, or wax model, in paste, the gem, or model, is pressed upon tripoli earth, or rotten-stone, in a moist state, which takes a perfect impression: when this is thoroughly dried, a piece of the glass paste, of the necessary size, is laid over it, and the whole placed in a furnace; the heat makes the paste melt like sealing-wax, and run into the mould; and to insure the impression, it is pressed down by the blade of a knife, or any convenient iron instrument; and thus either artificial intaglios or cameos are produced, as above stated; as, for instance (41), an artificial rock-crystal intaglio.

To make a more perfect artificial cameo than that mentioned above, there is an ingenious, though troublesome, process. When the back has been ground off from the white portrait, it is replaced on fresh tripoli; the coloured paste for the ground is then laid upon it, and the whole placed in the furnace, which causes the back and front to melt and unite in one solid body.

All the work of *modelling* in wax, and gem-engraving, is admirably suited to the delicate fingers of females, and could be easily enough executed by those lady amateurs who have a correct eye and taste for drawing. They might attain sufficient proficiency in modelling in clay or wax, by copying casts of busts and figures, before beginning to make portraits from the life, or composing groups. Of this we have illustrious examples in two of our Royal Princesses, who have shown great taste and skill in drawing, and in modelling figures, and, still more difficult, iconic bas reliefs (in clay)—which is the very essence of the glyptic art.

(167) represents an allegorical* figure of an angel reaping

* "The days of man are but as grass, for he flourishes as a flower; his time passeth away as a *shadow*"—"The reapers are His angels" Matthew xiii. 39).

the *hours* of human life, 12 inches high, cast in bronze, from a clay model, by a daughter of the author. It was designed as the gnomon of a *sun-dial*, the edge of the angel's wing throwing the shadow on the dial-plate. A passage in the *Botanical Philosophy* of Linnæus suggested this dial; he observes that "various flowers which close and "open again have different determined hours during the day "for opening:" as the crepis *t.*, at four in the morning; mesembrianthemum *n.*, at midday; the night-blowing cereus *g.*, at seven in the evening; and various flowers at other fixed hours. The dial is on a pedestal, in the middle of a parterre of flowers, so placed that the sickle throws its shadow on the one which designates the hour; which flowers are also in bas relief round the base of the figure, so as to represent the flowers of the plants when they are not in bloom. There is also, for the benefit of those who are not learned in the "language of flowers," a dial-plate with figures, under the point of the wing, the edge of which acts as a gnomon.

For ladies who have a taste for modelling, wax is infinitely more convenient for portraits or other small subjects than clay, because it can be laid aside and taken up again in a moment, after a day, week, or year, as it does not spoil like a clay model.

We hear complaints that there is a deficiency of employments for young women, by which they may earn a livelihood. Gem-engraving would be a lucrative as well as available mode of occupation for young ladies. The female artists already so employed obtain good prices for their works, of which there were specimens in the International Exhibition of 1862; as (139), the Death of Adonis, by Elisa Pistrucci, a sardonyx cameo; and also a beautiful carnelian cameo of a head of Zephyrus, by Elena Pistrucci.

APPENDIX.

APPENDIX.

AUTOBIOGRAPHY OF PISTRUCCI.

TRANSLATED BY MRS. BILLING.

I WAS born in Rome, on the 29th of May, in the year 1784, and was baptised by the name of Benedetto at the church of San Giovanni de Fiorentini. My father, Frederico Pistrucci, and my mother, Antonia Greco, were both Romans. The profession of my father was that of Judge in the Criminal Court; and, after filling many honourable posts under the Papal Government, he died, at the age of sixty-seven, Judge of the High Criminal Court at Rome, at the time when that city was governed by the French, under the Emperor Napoleon Buonaparte.

About ten months after my birth, my father was sent by his Holiness to Bologna, as Sub-Auditor of the Torrone; and, as he was a man of ability, three other offices of trust were conferred on him, viz. those of Chief Auditor of the Archbishop, Auditor della Grascia (the Court of Excise and Duties), and Commissioner of the Waters. Holding so many important situations, the reader may judge that he was enabled to bestow a liberal education on his children, who were soon three in number, I being the second. Philip, the eldest, besides being from his earliest youth devoted to painting, was likewise skilled in the art of engraving on copper, and in that of extemporaneous poetry: in which latter he became so cele-

brated that, in Italy, many gold medals of him were struck; in France, he had the honour to improvise in presence of the Royal Family; and in England, where he at present* is, his reception was extremely flattering. My father's third child was our sister Catherine; who died in our arms, at the age of twenty-one, leaving a daughter.

* * * * * * * * *

Scarcely had we arrived at that age at which children should begin to learn, when my father sent us to the best school, and likewise had excellent masters for us at home. My brother Philip, from the age of four or five years, showed, as I have said, great taste for painting; and in those hours which were not employed in the acquirement of Latin, his amusement was to sketch, on the walls of the room, and even on the furniture (if not prevented), different subjects from history, such as Horatius at the bridge, Mutius Scævola, &c. &c. I had no particular disposition to anything, and studied more from compulsion than inclination. I was many times coaxed to learn, by means of promises and presents. My poor father often had the patience to shut himself up in the room with me, that he might hear me repeat my lesson by heart; and my mother sometimes did the same. At length, by the efforts of so many teachers, I acquired a little Latin, somewhat after the manner of a parrot; and even obtained a prize at a public examination at the school, Pié de Bologna. My brother, however, made such progress in the same school, that I do not know if there ever was an example of a more excellent memory than his. He was as far advanced as rhetoric, whilst I could not get into humanity, for I never studied; and, although born with a head much larger in dimensions than is usual, my brain was so peculiar, that to commit anything to memory was almost impossible.

* 1820.

My father's intention was, that my brother and I should both study the law, in order that, when grown up, we might divide his employments, and he might repose himself; but Fate had ordained otherwise, and we were suddenly obliged to quit Bologna, on account of the invasion of Italy by the French—Napoleon conducting them. There was no time to lose, and my father (who, from the nature of his office, had been commanded to prosecute some Bolognese, who had planned a revolt against their own sovereign, to facilitate the entrance of Buonaparte), after despatching all his family to Rome, was obliged to fly for his life; otherwise, Napoleon, who descended the Alps with the word "republic" always on his lips, would certainly have made an example of my father, because he had been the judge of the conspirators, in order to intimidate any one who would not forswear that allegiance which he had once sworn,—for by such proceedings he reached that power which he exercised so despotically.

In fact, when scarcely arrived in Bologna, Buonaparte caused my father to be sought for; but he was no longer there. For, a few hours before Napoleon's entrance, he had had the courage to pass through the midst of the whole French army, disguised in the undress of one of their officers, armed with concealed pistols and a short sword, determined not to be taken alive. And thus, on foot, without repose, at more than fifty years of age, he travelled fifty-four miles across the Apennines, always avoiding the high road, for fear of being recognised, until he was out of danger; and then, taking the post, he reached Rome in safety, and rejoined his family, who had suffered much anxiety on his account.

* * * * * * * *

We were now again in our native city, my brother being twelve, and I eleven, years of age; but my father had lost all his property in Bologna, part of it being made away with by a

priest with whom my father had left it in trust, part by the new government having made use of our house to lodge the principal officers of the army. He had no sooner recovered from the fatigues of his journey, than he solicited from the Pope, not a reward for his fidelity,—being well aware that was a duty rather than a virtue; but he asked him for employment (the then Pontiff was Pius the Sixth): the following was his reply to the petition: "That, in the present critical circum-"stances, it was fit every one should bear his share." The reader may judge whether this was a gracious answer from a sovereign, whose state was undiminished and whose possessions were almost untouched, to a subject who, like my poor father, in faithfully serving him, had lost his fortune, endangered his life, and now saw himself surrounded by a wife and three young children. He, however, resigned himself to his fate, hoping to be able to live on whatever trifle my mother had been able to bring with her from Bologna, until Heaven should open to him some other way of reëstablishing himself.

In the mean time, he sent me to the Roman College again, to study my Latin, which was as disagreeable to me as ever; and, instead of applying myself to it, I amused myself by making little toys of wood, such as cars, cannon, &c.; in short, I was never without tools in my hand, some of which I had made myself, and some of which had been bought by my father, and given to me as rewards when I had learned my Latin lesson. In this way I began to show some genius for mechanics; and I well remember to have been much more praised for these little works than for my Latin compositions.

However, the French still advanced; and my father, fearing that Napoleon would cause him to be taken, thought it more prudent to remove from Rome, with all his family, towards Naples; intending, if the enemy should make further progress, to proceed thither, and perhaps to embark for Eng-

land, that he might be safe. This being decided, we set out for Frosinone, a province on the confines of the Papal territory. When arrived there, we listened with great anxiety to every report, and were upon our guard with every one, as it was rumoured that Napoleon had offered 1000 louis to whomsoever should bring him the head of my father.

In this city, unfortunately for me, there were Latin schools, and I was soon sent to one with my brother; who was so quick, that he got through his school duties much sooner than I, and therefore had many leisure hours to spare; and his love of painting continuing, he importuned my father to let him have a master, to which he at length consented, seeing that it was not likely to interfere with his other studies, and that it might serve to amuse him. He therefore found for him a certain painter, named Mango, of trifling abilities, but much admired for little landscapes. I could not bear to continue going to school by myself; and so unhappy was I that, at last, my father permitted me to accompany my brother, without, however, saying anything about my drawing, thinking there was but little chance of my succeeding any better in that.

Frequenting the house of the painter, the observation of my brother's progress awoke in me a certain envy, which was stimulated still more by the painter's sons, who considered me as good for nothing at all; and the reflection that time was passing away without any profit, made me take in hand the porte-crayon, and I attempted to delineate the parts of an eye, —which appeared to me difficult at first, but did not weary me so much as the Latin tongue. I then made another, which obtained some praise from my master; and, by degrees, I got on so well, that he became very affable, and, seeing my strong inclination for mechanism, he told me one day that he had a brother in Rome, who was an engraver of cameos (an art in

which it is not possible to make proficiency without a natural taste for mechanism); and from his description, and myself knowing that the instruments to be employed were a lathe, with a variety of tools, I became quite crazy to learn such a profession; and returning home, I told my father that, cost what it would, I was determined to become a gem-engraver. My father answered me with a sigh; for the French were still advancing, and he had other views for me. It so happened, however, that the Pope made peace with the French, and we returned to Rome.

Here—will the reader believe me?—my father, instead of allowing me to learn to draw, sent me to college, and to the detested Latin.* There were here many priests who taught it well, but they were in the habit of flogging those scholars who were not diligent; so that, if disagreeable before, it was now so insupportable that it put me quite beside myself; and, after having spent many days without effect in endeavouring to induce my father to alter his intention, I became so irritable that I remember to have quarrelled with all the lads in the school,—which at last made my father cease to send me there, as he feared something serious might befall me; and being sensible that his own university education and his law studies had to him only

* It is not surprising that an Italian boy should be disgusted with the Latin language, which has only just enough resemblance to his own to puzzle him more than if he had been set to learn German; and must have much the same effect as if Chaucer were put into the hands of an unhappy English child, wherein he would find a most embarrassing mixture of resemblance and unintelligibleness; and being flogged by a priest besides, instead of coaxed; not as—

"Ut pueris olim dant crustula blandi
Doctores, elementa velint ut discere prima." (HORACE.)

Kind teachers, who, instead of whops,
Coax little boys with lollypops. (*Hudibrastic version.*)

"Sed tamen amoto quæramus *seria* ludo." (*Vide supra.*)

been productive of sorrow and troubles which increased every day, he now decided that we should change our pursuits. My brother having become acquainted with a very clever painter, my father made arrangements with him for Philip, and spoke concerning me to the cameo-cutter, Signor Mango, brother to the painter at Frosinone. My father, in his own profession, was most skilful, and well adapted for the office of judge, having a majestic person, a serious air, unalterable firmness, and fearing nothing; but, as to the fine arts, he was quite ignorant of them, and, imagining that cameos might be cut without a knowledge of drawing, he placed me under the guidance of the before-mentioned cameo-maker, who seemed to have nearly the same idea, and, knowing little or nothing of drawing, was, begging his pardon, a very indifferent artist.

This man immediately set me to work to draw from prints, such as portraits of peasants playing on the pipe and the mandolin. After having made a copy of the first, he told me it was perfectly exact, because the poor man did not know how to correct me; and, for a month or two, I went on in this way. I then, by my brother's advice, went sometimes to his studio, and showed my drawings to his master, that excellent painter and designer, Stefano Tofanelli, who gave me admirable lessons, and sometimes lent me originals of his own to copy, encouraging me to continue, and holding me up to some of his more idle scholars as an example for them. My own master, Signor Mango, seeing that, in less than a year, I had become able to draw some figures, which by him were considered excellent, whenever he had to make cameos with figures on them, wished me to draw them for him, telling me that he did so in order to make me practise drawing in miniature; but, although I was then only fourteen years of age, I very well knew the reason my master did me so much honour;

though, instead of growing proud at it, I felt rather humiliated, seeing into what hands I had fallen. Therefore I proceeded under the direction of Tofanelli, as well as I could, studying day and night, without losing a single minute; and I well remember that Philip and I, on holy days, after having fulfilled the duties of our religion, used to go to the chambers of the Vatican, painted by Raphael, and, giving a small bribe to the keeper, we persuaded him to let us enter, and to shut us in like prisoners. There was no one there but ourselves; and, taking with us some pieces of bread and some fruit, we remained the whole day, drawing, upon scaffolds high enough to break one's neck if he fell; which accident had actually happened to some one who had been there before us. In the evenings we were liberated: and this plan we both pursued, every holy day, till I took a wife. With some months of such study, I became able to do miracles for my age; so that my cameo-master wished that I should cut flints, which have the foundation hard, with a soft upper stratum, being worked very much in the manner of Rosso Antico, and of so fine a grain that very beautiful work may be put on them. I therefore cut many; which he sold, with great profit to himself, without giving me a penny.

Having three other young men, whom he paid for working for him the same kind of hard and soft flints, in order to get them cheaper, he told them he could have them from me for nothing. Upon which they began to abuse me, in order to make me demand to be paid; and, one day, one of these youths, who was called G—— B——, was so angry at seeing me work so well in so short a time, and for nothing, that he threw the cameo at which I was at work on to the ground. I immediately jumped up to revenge myself for so great an insult; upon which, he drew out a very sharp ciappola (which is a tool used in cutting stones), and plunged

it into my abdomen. I, with the ciappola sticking in me, seized a great stick to give him a blow on the head; but he fled into the street, and I after him. The wound, however, gave me so much pain, that I ceased following him, and entered the shop of an apothecary, in San Pantaleo, who took out the instrument, dressed the wound, and sent somebody home with me. I leave you to imagine the distress of my father. But the wound was soon cured, and served as a good pretext for sending me to another master, although Mango would no longer allow Giuseppino in his house.

In this interval of time I bought materials, and set myself to model in wax, at home, without any instruction. I modelled some great heads, in bas relief, which very much pleased the friends of our house; among whom was one who was acquainted with a cameo-merchant called Domenico Desalief, and who brought him to see my bas reliefs. They pleased him so much, that he left me a stone of three strata, begging me to let it be the first thing I should cut. Of this merchant I have already spoken in my treatise upon *Pietra Dura;* he is the same for whom I made the great cameo, representing the crowning of a warrior, which still exists in the Cabinet of the Empress of Russia, believed by all to be an antique; it was even considered so by M. Denon, the Director of the Medals of Napoleon (see woodcut, page 84).*

The gratification of hearing me so much praised, in some measure mitigated the grief of my father at seeing himself deprived of employment—for the French were now really come; and, as he no longer possessed the means of under-

* Under the cameo in the case in the Cabinet of the Empress (the Hermitage) is written, "Couronnement allégorique de Trajan." It is scarcely necessary to add, that the name Trajan was probably "made to fit" by Desalief. An archæomaniac told the author that it was a "sacrilegious presumption" in Pistrucci to recut the ugly gem, it being an antique.

taking a journey, he would not sacrifice the rest to save his own life, saying that he would prefer falling a victim, if destiny had so decreed, rather than that we should be disturbed in the midst of our studies. It came into my head to get a machine made for cutting *pietra dura*, after a model of mine in wood, which was not more than four inches in diameter; and the tools were made by a German called Mastino, a famous mechanic. As soon as it was finished, my father sought another master to teach me (I was then about fifteen years of age) to engrave. He soon spoke to a certain Cerbara, who is still alive, and who had a great name. He, however, wanted to set me to work in a room close to his kitchen, which, on account of the smoke, and because there was no light from the window, I told my father would not suit me; he very unwillingly acquiesced, and we went to a certain Morelli, likewise very famous, who was willing to take me, after having seen what I had done.

In the mean time, the French garrison—thanks be to Providence!—was removed from Rome, and my father was then made Lieutenant of the Government at Rome, and Auditor of the Governor; in short, things began to mend with us. Morelli set me, directly, to cut a stone for him; it was a head in sulphur, which he gave me to copy, being the one usually given by masters to their scholars as the easiest. I did it so well, that he soon sold it to the man who had supplied him with the furniture for his studio.

In the space of eleven months, I made nine cameos for Morelli, amongst which were some both large and difficult; and, in my leisure hours (over-time), I made five for myself.

I now began to attend the drawing academy at the Campidoglio (the Capitol); and, after having drawn from the living model, I modelled likewise in clay for three or four months more; and, there being three prizes given in sculpture, and

six in drawing, I obtained the first prize in sculpture,—which, even now, seems almost incredible to me. It is the custom to make a great *fête* at the distribution of the prizes; and so my fame increased. My master began to grow a little jealous of me; wherefore, one day, upon his telling me that he wished I should dedicate the whole of my time to him, I called him a mean fellow, and, taking my machine on my back, I went out of his house, leaving him with that salutation. My father, when he saw me return home with my lathe, gave me a severe scolding, and wished me to return immediately to Morelli; but he held his peace when I informed him that, except on the first day, when Morelli had told me how to pound the diamond, and on which side the wheel should turn, he had given me no further instructions whatever; and, indeed, with one who has any natural genius, there is little more for the master to do.

Now, loaded with commissions on all sides, I began my career of professor, at not quite sixteen years of age. Of the money which I gained, I gave a portion for my maintenance at home; the rest I spent as I pleased.

In continuing to relate the principal events of my life, I must mention that my father was very fond of the sport of lark-fowling, which commences in October—that month which is devoted to amusements throughout the Campagnia di Roma —and had also accustomed his sons to it. It so happened that Jacopo Folchi, afterwards a celebrated physician and professor, who took drawing lessons of the painter Tofanelli, sometimes accompanied my brother and me to the chase; by which means we became acquainted with the place of his abode, and saw that he had many sisters, the eldest of whom, then only fourteen years of age, pleased me so much that, in one of our conversations together, I asked her if she could love me, saying that I should soon be able to marry her. She

answered me by owning that I pleased her, and promised that she would be faithful to me. Becoming more and more enamoured, I made a firm resolution to apply myself with renewed energy to business, in order that I might the sooner be in a situation to obtain her. My affairs went on prosperously; and my father, seeing I was in no danger of wanting a livelihood, and in order to keep me out of dissipation and harm—for I was very excitable—without saying anything to me, went one day to the young lady's father, who was one of the richest merchants in Rome, and asked his daughter for me. He consented, and we were married: she being sixteen, and I eighteen, years of age; and great rejoicings were made by both families on our nuptials.

I must here make some mention of my brother, who had given up the study of the *belles lettres*, and now thought only of painting. It is necessary to remark that, on the occasion of a marriage-dinner, it is the custom for the guests to produce some composition in honour of the new-married couple. On this occasion several were recited; and my brother, who had not prepared any composition, began, on a sudden, to declaim in verse, and thereby showed that he was endowed with the talent of improvisation. At the age of nineteen, I already had a daughter, to whom I gave the name of Victoria; at twenty, I had a son, who was called Vincenzio,—and he was born with the same remarkable hands and feet as the rest of the males of the family for three generations. In order to explain this peculiarity, I must acquaint those who have not known me, that my paternal grandfather, who was a man of great consequence in jurisprudence, had his hands and feet different from those of everybody else: not in the form, or in the joints, for he could play beautifully on the violin, flute, and other instruments which require flexibility; but in their palms being covered with a skin so callous and

thick that he pared it, from time to time, with a razor; the soles of his feet were the same. My grandfather and my father were born with the same peculiarity, as well as myself and my brother; the females were all like their mothers.* We experienced no inconvenience; and, when the skin became very hard, we could not instantly perceive whether a thing was red-hot or very cold: so that I could take a red-hot coal and throw it to a distance without its burning my hand.

Not to deviate from the thread of my narrative as an artist, I must mention that the cameo-dealers began to practise deceptions with my works, which did not please me at all. Scarcely had they received from me those which I had executed for them, when they effaced my name, and wrote that of some old artist of much renown; and thus, with those in onyx, or other Oriental stones, they either took off my name, and replaced it by that of some Greek artist, or sold it as antique, without any name at all. This was told me by some friends of mine, and, at first, I would not believe it; but, upon investigation, I was convinced of it, because I saw my works again, all worn and scratched, like antique cameos; and I then resorted to the expedient of affixing my private mark, whenever I worked for a person of whom I had any suspicion, in some place where it could not be perceived—if it were a head, in the masses of the hair; if a figure, in the drapery, or some other place, where, without knowing my practice, it would be very difficult to discover it.

At length, after having worked several years for these

* This varied in Pistrucci's children, as those of the boys and girls who resembled the mother in features had soft hands; but the boys and girls who resembled the father had them horny, as Elisa, the now celebrated gem-engraver, who is the living image of her father, and is married to Signor Marsuzi, 16, Via delle Quattro Fontane.

dealers—Vescovali * and others—I met with a certain Count Demidof, a very rich Russian nobleman, who is still alive (1820). I did some large pieces of work for him, and

* One of the great sources of supply of gems to Poniatowski, Blacas, Demidof, and other collectors, was Ignazio Vescovali, whose establishment the author can remember in the Piazza di Spagna; a large "magazzino" for statues, pictures, gems, and other objects of *virtù*, both genuine disinterred and also manufactured on the premises. He, like Bonelli, employed the best artists in Rome, to make the *gems*, both real modern and *un*real antique—such as Girometti, Bongiacci, Dolcini, and Pietro Sardini. The chief works of this last-mentioned artist were cameos, from three to five inches in diameter, of Emperors' and Empresses' heads, Jupiter with the Eagle, and other groups, &c. He died of cholera, in 1837. Vescovali supplied some of the talented young artists most liberally with gem-stones and diamond-bordt. It would be a nice matter to distinguish how many of the "antiques" in the still-celebrated and vaunted collections are their work, as they cannot be brought forward to identify them. There was, at the same period, a well-known half dealer, half amateur—like Hertz—named Laurenti, one of the hereditary *employés* of the Papal Government, who, whilst his father lived, was a gem-engraver; but when he succeeded to the emoluments of office, indulged his artistic taste in collecting, and, of course, dealing with the other connoisseurs. It has been said that he was the sponsor, if not the author, of several of the gems in the known collections; but this may be all merely artistic gossip, which the author has heard in Rome, Paris, and elsewhere; still, it contributed to shake his faith in antiques.

All the collections contain more or fewer of these large, rather clumsy *soi-disant* antiques, most of them covered with that *veneranda ærugo*, called by the dealers "patina," composed of iron-filings, aquafortis, and an animal excretion, in which the gem is soaked twenty days or more, and then dried in an oven; which looks exactly as if they had been dug out of the earth, and not washed after they were taken from the ("scavi") diggings in the vineyards round the Palatine Hill, &c., where it was pretended they were found by the peasants. If the connoisseur attempts to wash it off, it remains fixed and indelible: nay, he may soak it in spirits of salts (hydrochloric acid), or caustic, alkali, &c., in vain; so that it is thought to be genuine earth-damp of hundreds of years; although, in fact, if they had been in the earth thousands of years, they could be easily cleaned by washing them with soap and water. But there is a way of cleaning them, and exposing their modern nakedness, *i.e.* to steep them in pure nitric acid for ten or fifteen days,—*credite experto!* Thus the author is betraying all the secrets of the "craft," obtained through the freemasonry of his having been an amateur gem-engraver when a youth.

he paid me well, according to the prices I obtained at that period; then a General Bale employed me frequently, and my name became better known amongst the foreign noblemen, and I gained much money. In order to divert my wife and children, I bought a good horse and calèche; with this we used to go about Rome, and into the country, and enjoyed it much.

In this place—to divert the reader from the tedium which my narrative may have produced—I am inclined to relate a circumstance which happened to me, as it appears extraordinary enough to be interesting; and even if not, I am pledged to relate the events of my life, of which this is an important one.

At the age of twenty-four, my great application to such minute objects as the finer parts of the cameos, and having just worked upon a stone which had a stratum of a fiery red colour, produced a weakness of the eyes so great that whenever I worked for half an hour my sight failed, and whichever way I looked there appeared two clouds of smoke, which disappeared when I fixed my eyes on an object steadily, but returned the moment I moved the pupils. Being tormented in this manner, I applied to the principal surgeons and physicians of Rome, who dosed me with viper-broth, applied blisters, bled me, and, in fine, martyrised me, all to no purpose. I became so melancholy, that my relatives, fearing I might commit suicide, never permitted me to be alone, and did all in their power to entertain me.

It happened that a certain apothecary, of the name of Ricci, supplied me with some medicines, who, coming to the house, and seeing me so depressed by my malady, invited me to accompany him on a visit to his native place, where the air was so pure as to "seem to have almost the power to restore the dead to life." My family encouraged me to go with him;

and so, setting out the day following, like inconsiderate young men, without thinking of a passport, we travelled as far as Rieti in my shooting-gig; where arriving at the close of the evening, we went to the inn and ordered supper. Whilst we were eating, our host came in with a book in which we were to write our names, as was the custom in time of war. Whilst I was signing my name, the innkeeper looked steadfastly at my hands; he recollected that those of my father were similar, and thence deducing a relationship, he began to make me low bows. Upon my expressing surprise at this, he told me that he had served as sbirro at Bologna, when my father was judge there, and that from the respect he bore the father, he would do anything in his power for the son; in proof of which, he ordered for me the best chamber he had, added to our supper the most delicate things he could furnish, and sent for some musicians to amuse me, as he saw I was sad,—the cause of which Ricci explained to him.

This man was a Venetian, and of a very sprightly disposition, but withal violent when he got into a dispute, and he was not ashamed to avow in public that he had killed three persons in various brawls whilst he filled the *honourable* office of sbirro; but so far as I saw, I can only speak in his praise; he related circumstances with so much spirit and vividness, that he delighted me as much as the perusal of an entertaining book could have done. He asked me whither I was travelling; and when I said, to the fair of Monte Reale, he told me that it was impossible to proceed, because there were so many insurgents on the road, who robbed and murdered whoever they met. As I had heard him talk so much of deaths and wounds, and of his own exploits, I thought he exaggerated the danger from the peculiar bent of his character, or perhaps for the purpose of delaying me at the inn for his own emolument; so that I did not attend to him, but was on horseback the

next morning before daylight. Ricci rode a hired horse, and, with a man on foot as a guide, we began to ascend the Apennines towards Abruzzi, a province of the kingdom of Naples. We arrived at Civita Ducale, which is on the frontier; but in the old fort, which is completely dilapidated by earthquakes, we found neither soldier nor officer of customs, and so entered the kingdom without any one asking us for a passport.

We had scarcely begun to ascend le bocche d'Antro, when my horse began to get restive, from his feet getting jammed between the stones; he became quite furious, being very spirited, and not fit for such impracticable roads. So that, between the danger of breaking my neck and the variety of the beautifully picturesque scenes around me, I began to be diverted from the recollection of the complaint in my eyes. We approached a lake which is called Canope, the name of the neighbouring village; a most delightful spot, surrounded by mountains—high, rocky, and precipitous; round the margin are verdant meadows, and trees which dip their boughs in the water, forming the most beautiful place that I have ever seen in my life.

The women of the village were washing their clothes, having, according to custom, taking off all their garments, and covered the body slightly with a linen cloth; so that it was a most curious sight to behold them within this transparent water, with their beautiful tresses, like the figures of Magna Græcia, and with ornaments of coral on the neck. I would that every artist in the world had an opportunity of seeing the same picture; and if any one should find himself sad and melancholy on account of a complaint in his eyes, as I had been, let him go there, and he will thenceforward think no more of the clouds of smoke, which will disappear as they did from me, for I thought no more of them; and had it not

been for my companion, who drew me away, I should have stood there petrified, gazing till now.

Thence we passed through a narrow valley, called Borghettaccio. Here I could perceive that the countenances of the men began to wear a more ruffianlike appearance: and the singularity of dress which at that time I affected had nearly cost me my life. I wore a doublet, or shooting-jacket, of bright-green cloth, a scarlet-velvet waistcoat, and a red cravat; yellow-leather breeches, with top-boots, and ornamented silver spurs; a pair of green spectacles; bushy whiskers, reaching to the chin, and my hair long over the temples. My horse was furnished with an English saddle, with a valise of red Russia-leather behind, and in front a great-coat rolled up and covered with yellow leather, and a military collar, the bridle being mounted with plates and little chains of silver; everything, in fact, which I could think of to make me remarkable. The people, at our entrance into the village of Borghettaccio, took me for a French officer, and stared at me with open mouth; whilst our guide related to us that in this inaccessible place twelve hundred French soldiers had been murdered by the inhabitants, for the sake of their military equipments. The pass is between two rows of houses, whose foundations are at the foot of inaccessible cliffs; and the road not admitting more than five or six men abreast, they were overwhelmed by the women pouring on them boiling oil and water, and the men rolling rocks down from the mountain; many of them also were shot, without knowing whence the firing proceeded. As we went along, he told me that the river Velino, which we had just passed, had its waters tinged with blood for four days. On a sudden, my horse started; and on looking up, I saw two men opposite, who each set a large cask rolling towards us, which could not pass without striking us. Fortunately, I was then active, and jumped from my horse,

who leaped also more than I did out of the way, and thus the casks passed without injuring us. I did not look up, as any signs of resentment would only have led to our being cut in pieces; but I remounted, and saying to Ricci that there was no time to lose, we set forward, I flogging Ricci's horse, who had no inclination to quicken his pace. I had no weapon; and if I had, the attempt to use it would have been temerity in such circumstances.

Having proceeded a little farther, we halted at a village of which I do not now recollect the name, where they told us we could not proceed, as we should be murdered by the brigands. But what, then, was to be done? Return through Borghettaccio? Certainly not. So we made up our minds to advance at all hazards. Ricci was very sprightly, having drunk some mulled wine, which had got into his head; I was sober enough, having never drunk anything but water to the age of thirty-two years. In the meantime, night came on, and the stillness of the mountains was broken by the sound of drums, or the occasional discharge of muskets; and we did not feel secure that a random shot might not reach one of us. But, with Heaven's help, we arrived at about ten o'clock at Monte Reale; having travelled a good forty miles of a mountainous, difficult road. Here we found all the country under arms,—peasants and brigands, as well as French soldiery and sentinels, who challenged us on all sides, without our knowing to which party they belonged, or how to answer them; and, therefore, we made an indistinct cry, which might pass for anything; which was not a new expedient in those troublous times in Italy. In this way we got amongst the houses, and dismounted at that belonging to Ricci's family. Everything was in confusion in the town; several families came to inquire of us if we could give any intelligence of their husbands or sons, who were serving with the military; but we had

not seen them. There now began to come in small bodies of French, who were falling back from all the country round, to concentrate themselves with the militia of Monte Reale, and make a stand at this point, as the hill commanded those around it; from which preëminence, I suppose, it received its denomination of Reale.

The mother of Ricci was much distressed, and in a state of great anxiety about her son and me, because we wore our hair cut short behind, which she said was considered a mark of French Jacobinism, and that if we were taken by the brigands our death was certain. His brothers brought each of us a fowling-piece, with powder and bullets, in order that we might join them in the defence of their country; as intelligence had arrived that eight hundred of the brigands were on their march for that place, and, consequently, there was no time to be lost. I asked Ricci if this was the care he had for my eyes, to bring me here to be shot in defending his country; and threw myself on the bed in my clothes, cursing my folly in having left Rome so inconsiderately.

The following day, it was ascertained that the brigands had taken a different direction, and during the night a thousand French had marched in from Aquila; so that we felt more secure. But I had seen enough, and determined to return to Rome by the city of Aquila, where the French had their head-quarters. Ricci said he would not let me go alone, but I believe he had no inclination to remain; and we set out on horseback.

The distance is twenty miles to Aquila, where we arrived at nightfall. No one questioned us at the gate, and we proceeded to an inn, which proved to be but a public-house: not that there were not better in the town; but it being the first time that we had travelled that way, we were not acquainted with them. We went out to a *caffè* and got some excellent ices,

and from that we went to sup at a *traiteur's*. Several persons were in the room; and perceiving by our accent that we came from Rome, one of the gentlemen came up to me and said: "You are a Roman, sir?" I answered, "Yes." "And so am I," said he; "and this is a wretched country at this moment; you have seen, as you came along the streets, what a number of heads are fixed upon the palisades?" I said, "No, we arrived after dark." He rejoined: "The French General Gobbo, who commands here, is worse than Robespierre; every one that he finds without passports in due form, he condemns to be shot as brigands; look at my fingers." I did so, and observed that they were swollen and livid. "You must know," said he, "that I am a comedian, and, though I had acted four weeks at the theatre, because they found me one evening going home without my paper of security, this Gobbo kept me eight days in irons, and all thought that I should have been shot; but," he concluded, "no doubt you are furnished with credentials, to prevent your having anything to fear." I answered, "To be sure we are;" for I began to suspect he was a spy; and directing my eyes towards Ricci, I saw that he was paler even than I felt myself to be.

In the meantime, we commenced our supper "with what appetite we might," and were thinking of retiring, when the *traiteur* brought his book, to set down our names; saying to me, that he should forfeit his life if he neglected this. He then said, "I must warn you to take a lantern in your hand, or the *gendarmes* will fire on you." He then gave us a light as we were going out, but called me back to tell me to keep my passport ready to show to the *gendarmes*. Here I may ask, if the bravest man would not have been discomfited, knowing as I did that we had no passport, and that my showy dress rendered me peculiarly liable to be mistaken for one of

the brigands. In fine (the *traiteur* not being willing to let us sleep at his house), with the assistance of Providence, we reached our inn, having scarcely power to knock at the door. We retired immediately to our beds,—which we found in a large saloon, one for each, in a kind of boarded recess,—lying down in our clothes, without even taking off our spurs, there to await the daylight, and plan how we should get away as soon as the gates should be opened. But not having passports overturned all our projects, and I thought it better to go and avow our circumstances, and say how we had left Rome, and to remain prisoners until we should receive passports from Rome. Ricci approved of this plan, and, being satisfied with the arrangement, fell asleep; but I remained thinking of my family, and wondering whether I should ever see them again. Suddenly I heard a bell toll, in the manner which calls the people to arms. Ricci awoke, and said to me, "It is midnight." "But," I said, "what is the bell tolling for?" "What!" answered he; "do you not know that in this place they give ninety-nine strokes at morning, midday, evening, and midnight? Here everything goes by ninety-nine; there is a fountain, which has ninety-nine mouths; there are ninety-nine places, or squares,"—and he told me of so many ninety-nines, that at last I said, "You stupid fellow! we shall make up a hundred and one to-morrow, because you did not give me notice that it was necessary to have a passport."

Whilst we were conversing in this way, there came a loud knocking at the street-door, evidently of soldiers who were knocking with their muskets, and at the same time a trampling of feet, and the rattling of scabbards against the ground. We both concluded that the soldiers were come to arrest us. The waiter looked out of the window, and asked what they wanted. "Open the door for the *gendarmes*," was the answer. Let the reader fancy himself in my situation. A number of

gendarmes came up-stairs; and when I expected them to knock at the door of my closet, I heard them lying down, some on the ground, and some on their beds, as I knew by the rustling of the leaves of Indian corn of which they were made. This quieted me a little, though I did not feel at ease during the remainder of the night. As soon as the daylight began to shine through the fissures of my recess, I opened the door, and, upon my bidding good morning to the *gendarmes*, who were stretched on the floor, they answered civilly, which reassured me, but did not satisfy me entirely; so, turning to Ricci, I said: "We have no time to lose; let us go to the police, and give ourselves up, declaring that we have no passports, and putting ourselves under the protection of the governor until we can receive one." We went, and when we gained admission, and I had spoken to the Intendant, he answered very kindly: "I cannot assist you; I should ruin you,—for the General will not listen to reason; and my advice to you is, to escape if you can, though it is my duty to arrest you; but I trust to your countenances that you are honest people; so get away." "But how is that to be effected?" "I cannot tell you," said he, "for it is certain that your passports will be demanded at the gate." We then took our leave, more dismayed than before. However, we mounted and rode slowly out of the gate, sauntering and whistling, as if we were inhabitants riding out for amusement; and none of the sentinels challenged us. So ended this rather exciting adventure.

I now became acquainted with many ladies and gentlemen, among whom was the wife of the Grand-Duke Constantine, whose portrait I modelled in wax; and she afterwards employed me to engrave a cameo from it, which pleased her very much. I then made a portrait of her first chamberlain; and so my affairs went on improving.

I met at this time, in Rome, one Angiolo Bonelli, a gem-dealer, who had grown rich in England; and, without my having ever known anything about him, as he had been for many years in London, he came to seek me, and said he wished me to do some work for him. I consented, and he left me a number of very fine Oriental stones, which he said he had collected in London. This man affected the style of an English gentleman—spending a great deal of money in dinners and amusements—in such a manner that it seemed to me a happiness to have become acquainted with so rich a person. He never mentioned prices to me: every time he came to see me, he put his hand into his pocket, and pulled out a handful of gold, and left it with me, saying he did so to encourage me to work only for him, and that he would keep an account of what he gave me. I dedicated my time entirely to him; and as he remained in Rome for more than a year and a half, I executed many things for him. He likewise employed almost all the other artists. At his departure, however, when the accounts were made up, I did not find him quite so generous as in the beginning; but I do not mean to complain of the way in which he treated me, even then. He did not wish me to put my name to any work; so I served him as usual, putting my private mark on them, without letting him know it. He set out for Paris, and, for some time, I heard no more of him.

About this time I got acquainted with Mr. Rielli, Intendant-General of the Grand-Duchess Baciocchi of Tuscany, sister of the Emperor Napoleon. He ordered me, on the part of his lady, to make a portrait of her in cameo, copying it from a model in wax done by Santarelli, a famous sculptor at the Florentine Court. At the same time, she ordered one from Morelli, my former master, and one from Girometti, who was older in the art than I by ten years; but the mischief was,

that there was but the one model by Santarelli, to be copied by the three artists; and, at the end of a month, we were to deliver up our works completed. Therefore it was necessary we should each lend the model reciprocally to the other, because, among the three, I was the only one who could make a copy of it in wax, as the others did not then model in that material. I gave precedence, in the loan of the model, to the oldest; and these gentlemen played me the trick of not giving it me at all until they had finished their own cameos. In the meantime, I went wandering about among all the curiosity-shops in Rome, and at last found a medal of the Grand-Duchess which Santarelli himself had made in Florence, but which was very inferior to his model. I made use of this: and there only remaining eight days to finish the cameo, I made a little model in my own way, and cut the cameo, which was a large one, in a very short time; but, indeed, from the time I began it, I never quitted it. I ate my dinner, like a labouring man, without ever sitting down; and, always sticking to my work, I finished it, and delivered it at the appointed time to the Intendant of the Treasury at Rome, who had been desired to receive the cameos. He said I had been the laziest of all, since the others had brought their works two days before me. I told him how I had been treated, which he, no doubt, reported; and the answer came by post, that I alone should keep the model, and make as many copies in gems as I could. So these gentlemen were mortified and frustrated in the wrong they had wished to do me. I made three or four of these portraits; and, at the same time, I was commanded to make one of each of the other sisters,—the Queen of Naples, and the Princess Borghese.

I must here relate an incident which occurred to me—not exactly one of those which so often happened to the famous Benvenuto Cellini, but one which much resembles them in

everything except that there was nobody killed; and I flatter myself to have shown more presence of mind in my proceedings than he was accustomed to do. The reader must know, then, that at this time I had taken a great liking to boar-hunting; and I used to go, from time to time, with my friends, who were all artists, to try to kill some. One day, we made up a party with a certain Louis ———, an excellent engraver at Rome, and one C. Fabri, a famous mosaic-maker, to go to a cover nine miles distant from Rome, and hunt for boars. We went in my *caratella*, and hunted for a whole day in a wood full of sharp thorns; but found nothing. I got so bad a headache, that I could not stand upon my feet—for there is nothing which makes a sportsman so weary as not finding his game. In returning, I yielded the care of guiding the horse to my friend Fabri, and fell asleep. I must observe that our shooting-carriages are usually made with two or three separate cross seats; the sitters arranging themselves by two and two, in order to balance the weight. Fabri and I sat in the first seat, and L—— in the last. This last seat is like a great basket, where there is a quantity of straw, and where the dogs are kept, and all the flasks of powder tied to it. Some hold the guns in their hands, and some tie them to the seat. L—— lighted his pipe, and did not observe that the tinder, instead of going into the road, fell into the straw. It was a very windy day, so that the straw caught fire in a moment, and we found ourselves surrounded with flames. I awoke at the cries of my companions, and with them jumped into the road. Fortunately, there was water near us; and, fetching it in our hats, we extinguished the fire with much difficulty, and so escaped the danger from the gunpowder.

This accident alarmed me very much, and, as Romans are still very superstitious about auguries, I said to my companions, "I fear, before we get home, some other misfortune may

happen." In fine, we entered the city, and went to the house of Fabri, where he left his gun, and then we proceeded together in the direction of my house. We approached the Piazza Colonna, where the people were accustomed to assemble in the evening, and where lived Colonel Rosarol, who was then quartered by the French in Rome, with 5000 Neapolitan soldiers. The whole of his regiment was there assembled, to wait till the drums should beat the "retire." We arrived exactly at the thickest of the crowd, and found it very difficult to cross the square; so, in order to avoid the people, we turned up a street called Santa Maria. In the middle of this street, which is not very wide, were two Neapolitan soldiers and a servant in livery. My friend Fabri cried out to them to get out of the way, and I did the same: so that the soldiers, who thought themselves our masters, were offended; though they said nothing to us in passing. But scarcely had we passed, when the servant seized the bridle of the horse, and held him by the bit, so that it was not possible for him to stir. At the same moment, the Neapolitan sergeant, who was the chief of the party, began to cut at me and my companion Fabri. He was on the right, and I on the left; and all the blows passed me, without, however, hitting me, — except one, which struck me on the arm, but did not wound me. Not being able to turn my head, as the blows came so fast, I threw myself out of the chaise, with my double-barrelled gun, which was loaded, and presented it at the soldiers, threatening to kill them. In the meantime, a great many collected around us; but I did not lose my determination. I saw that poor Fabri was dropping blood; and, presenting my gun at the sergeant, I compelled him to retreat backwards to the French guard-house, which was close behind him; Fabri, severely wounded, following me, and supporting himself as well as he could. I

entered the French *corps de garde*, with my arms still in my hands, and consigned the malefactor to the sergeant of the French guard. In the meantime, whilst the wounded man, in order to make a report of it, explained the affair, I bethought me that I had lost sight of my other companion, L——; and, thinking he might be in difficulty, I said to Fabri, "I must leave you for a moment, in order to go and see what is become of L——." He approved my intention, and I left the guard-house, passing a second time towards the Piazza, like a madman. As soon as I arrived at the place where the affray had happened, the people told me that my companion, when the strife began, had hid himself in a butcher's shop; and, when it was over, had got into the sporting-carriage again, and set off with his gun. By which the reader may learn, that one cannot always trust one's companions in danger. If L—— had helped me, I need not have exposed myself so much; but the poltroon fled and hid himself, leaving his friends to be slaughtered. When I had heard he had gone off with the carriage, I imagined he might have gone to my house; and thus my family, not seeing me, would certainly think that I also was wounded or dead. I then set off home at full speed, to show them that I was alive. I found my father, mother, wife, and brother assembled, who, all embracing me, would not permit me to go out again, for fear that some soldier might kill me. At length I yielded; and my brother ran to the French quarters, instead of me, to assist my friend. He found the French and Neapolitans all in commotion. For the Neapolitan colonel, having heard that a citizen had disarmed his sergeant and made him prisoner, ran to the French quarters, and, making an officer stand with his sword at the breast of the sentinel, entered himself into the guard-room, with his drawn sword, and repeatedly struck at my poor friend, whom he found there stretched on a bench, and already covered with

wounds. The French sergeant unsheathed his sabre, and began to fight with the colonel; and, in the meantime, some Romans, in pity to their countryman, took him out upon their shoulders, and carried him, in this mangled condition, to the hospital; whence he was carried home; and it was forty days before he was well. But this affair was long remembered.

The Roman people had begun so much to abhor the Neapolitan troops, that, on one side or the other, some one was killed or wounded every day. The National Guard were against the Neapolitans, as were also the French, on account of the offence done to their *corps de garde;* so that, after fifteen or twenty days, they were sent back towards Naples, accompanied by the artillery, in order that Rome might be free from future disturbances.

But to return to the portraits of the Princess Elisa Baciocchi, where I left off when I began to relate the above affair. Up to this period, I had worked for her without having seen her. The Marchese Canova, who was then Cavaliere, had modelled a bust, with her portrait, from which she had ordered a statue. And, as this would require a long time to make, she wished to have a copy of the bust to show to her friends; and desired her secretary to write to me, asking me to go directly to the house of Canova, to make a model in wax of her bust; she at the same time signified to me that Canova had already been written to on the subject, that he might give me permission. I went to the Cavaliere, telling him what I had been commissioned to do. He replied, that he was very sorry to tell me that it was not his custom to allow copies to be made of his works before he had made them public, and, therefore, he could not allow it in the present instance. I immediately made the Princess acquainted with this inter-

view with Canova, which did not fail to displease her, and made her more anxious than ever to accomplish her wish. She wrote an imperative letter to him; and gave me orders to go and begin the model. I returned anew to Canova, who told me he could not resist the reiterated commands of the Princess, and conducted me himself into a studio in which there was a statue in plaster; which, he told me, was the true portrait of the Princess, made by himself at Florence. And I, who had never seen its original, believed him, and began to make the model of wax in basso relievo. After two days, the Cavalier Canova passing through that studio, I showed it to him, praying him to give me his opinion of it. He, patting me on the cheek as one does to a child, said several times, Bravo, bravo! and appeared much pleased. He then told me he should like to have another model from the other side, as they took me so short a time to do; and that then they might be sent both together, and be better judged of. In consequence, I made another, and showed it to Canova, who bestowed on it the same praises. I put them both in frames, and immediately sent them off to Florence. An answer soon arrived, saying that my models were extremely well done; but that I had made a different head, as this did not resemble the bust that Canova had made at Florence; and that I was to take them to Canova, as soon as possible, to correct the defects; and, as soon as they were altered, I was to send them back,—because, if approved of, I was to execute them in cameo. This circumstance disturbed me very much; and as I was always, unfortunately, very proud in my nature, with the artists of my own era, I preferred losing the benefit of the Princess's protection, rather than go and tell Canova that he was to correct my work; being convinced that my models were copied with so much exactness, that it was impossible to make them more like.

Not knowing what answer to give, I sent none at all. The affair slumbered for some months, and I heard no mention of it. By this, the reader will see how perverse artists sometimes are to each other, and how even great men, like Canova, allow themselves to be blinded by self-love, and lose themselves in frivolities.

I had already set my mind at rest, and was going on with my other works—of which, thank Providence, I always had enough—when one day, as I was cutting cameos, and singing away, as was my custom, the Intendant of the Grand-Duchess Baciocchi made his appearance, who reproached me much for not having obeyed his mistress, and sent back to Florence the corrected models. I told him my reasons, with some warmth, and he, telling me to accompany him to Canova's studio, took the models along with him, in order that he might see what I had been made to copy. We set out; and, the studio being only a short distance from my house, we soon arrived there. As it was always open, without giving our names, we entered the room in which was the statue whose head I had copied. The gentleman stood stupified; and, not being able to persuade himself that Canova had played me such a trick, he asked for him; and as, at that time, all Frenchmen who held any office made themselves be attended to, he was shown into the private cabinet, where Canova was at work at a marble bust, an exact copy of the true model he had made in Florence. Great was my surprise to hear the Intendant Rielli say: "This is the bust which is like—this is the original! Why did not you, Signor Canova, give this to Pistrucci to copy?" I saw that the Cavalier was a little confused; but, recovering himself, he said, that for so small a thing as a cameo, he had not thought it necessary to make me copy the original. Mr. Rielli made no answer; but as soon as we were gone out, he said to me in the street; "This Mr. Canova shall hear more about

it!" And, soon after, he set out for Florence, telling me that he would see after the affair; and advising me, in the meantime, to keep up my spirits.

Canova, seeing he had got into difficulty, in order to remedy it, sent a mask of the original to my house; which, as there was likewise to be a copy of the chest and neck, was of no use to me. But, one day, when I went to Canova's studio, to show that I was not implacable for what had occurred, a person of the name of Hoffmann, who worked much at Canova's male figures, told me, if I liked it, he would let me copy the original; and that, as the Cavalier was gone to Frascati, I might work there without any one seeing me. However, I did not wish to do this, and went away, after having considered and examined the bust so attentively that, at home, I made one from memory, that might be thought to have been executed with the original before me. In the meantime, a letter arrived for me from Florence, in which it was said that the Grand-Duchess wished me to start immediately for Florence, as she desired that I should take her portrait from the life.

I set out with the courier the same day. As soon as I arrived, I was introduced to the Princess, who, after saying many civil things to me on my activity in obeying her, appointed me to come the day after, to make her portrait, at eleven o'clock, which was the hour of her *déjeûner à la fourchette*. I went accordingly, and found the sovereign at table with her child, then between four and five years of age, and all the court standing round in a circle. As soon as she saw me, she inclined her head to me, without saying anything, and I was told by a chamberlain that I might begin. I, who was not yet accustomed to courts, took a chair near the Princess, on which a poodle-dog was lying; and, without paying any attention to it, turned the chair, causing it to

fall down. The poor animal, not being used to such treatment, began to cry: whereupon the Princess gave me a look that flashed fire, and a murmur ran round the apartment; but I, pretending not to understand it, sat down and began the portrait. In the meantime, so many French and Italian gentlemen came round me, that I had scarcely room to work. In a short time I gave the wax some shape; and the Marchese ——, who was President of the Academy and a Chamberlain of the Court, having approached, said to the Princess that he had never seen anything so like. She forgot my offence against the dog, and graciously desired me to show it to her. She began to laugh, and asked the ladies if they thought it resembled her; and upon their replying in the affirmative, she said to me: "Come to-morrow, that I may give you another sitting. I will order that you shall have an apartment in my palace, and everything you have need of. In the meantime, write to Rome for the engraving machinery, as I wish that you should work in my house." I was so delighted, that I was quite overcome with joy. And now those same courtiers who had raised a murmur when I threw the dog on the ground, overwhelmed me with politenesses. In the meantime, the Princess rose from table, and, making me a sign to follow her, went away. Not knowing what to do, I remained motionless. She passed on through a suite of apartments, and still I did not move. But immediately one of those gentlemen told me I was to follow: and so I did. We passed through a great many rooms, full of perfumes and odours; and I fancied myself in that poetical place where Tasso describes Armida to have conducted Tancred. At last we stopped in an apartment; and she told me, still more condescendingly, that she would show me all her gems. We sat down; whilst I examined them all, saying what I thought of each. She then looked at the clock, and said I might

go on with her portrait, as she was just going to dress, in order to go to chapel. I assented, and we entered an apartment containing a number of large looking-glasses, with five or six waiting-women all ready with comb, diadem, and robes : it was truly the toilet of Venus. I sat down again to work, seeing the profile of the Grand-Duchess advantageously in a looking-glass, and very nearly finished the portrait. The next day, after another sitting, it was finished entirely. She then desired me to make that of her daughter, the Princess Napoleon ; which work required no little patience, for the child was so lively, that she did not stand quiet a single minute; but, with the assistance of the Marchesa Riccardi, her governess, I finished it in three sittings. The Princess then sent me to the apartment of her husband, near the top of the house; and I completed his portrait in two sittings. When all the models were finished, I began to work in *pietra dura*, in her house. Then many gentlefolks took it into their heads to have their portraits taken; but the Princess only permitted me to make one—that of the Marchesa Canami, daughter of the Spanish Ambassador.

I passed my time gaily, and would have sent for my wife and children, in order that they might enjoy my good fortune, had not the unfavourable reports we heard of the war in Russia made me give up the idea. I now made a portrait, on onyx, of the Duchess, much smaller than a fly, and, putting it into a little ivory box, presented it to her. She was so delighted with it, that she had it set with large brilliants, for a bracelet ; and, after having worn it for some days, sent it as a present to Maria Louisa. She told me, some time afterwards, she was so much pleased with my cameos, that, when the Emperor returned from the campaign in Russia, she would send me to the Court at

Paris, that I might make both their portraits from the life.

Thus everything went on prosperously with me. Then the time arrived at which the Princess passed annually some time at Pisa, and she wished me to follow. I therefore went there to work, and gave instruction to Madame Feugherlen, her first lady of the Court, in modelling in wax. And I recollect that, one evening, the Princess herself took my sticks, and began a little model; while, in the next apartment, there was a great concert, and all the nobility were assembled. In the midst of this my career, so lucrative and honourable, the English made their appearance in the Mediterranean, and the reports from Russia were not very favourable. On which account, the Princess, in order to arrange her affairs, sent me secretly, that the people might not foresee what she intended to do, with one of her attendants, named Moriani, to the house of a banker at Leghorn, as it was reported, to make his portrait; but this was only a pretext, for Moriani changed a large sum of silver money into gold, by way of precaution; and we very soon returned to Pisa, and I to my work again. But one morning I heard a great movement and bustle in the palace, and was told that it was necessary to set out instantly for Florence, because the English had disembarked a little distance off. Wherefore, in less than an hour, we had packed up, and were off. There were only post-horses enough to put one to each of the calèches, which generally have two, although we had heavy bags of gold to carry with us.

Having returned to Florence, I resumed my work; but the affairs of the French grew every day worse; and, fearing I should be massacred in the palace, I used to listen to the slightest noise I heard, that I might make a timely escape, with my cameos in my pocket. In a few days Murat arrived, on his way to join the Allies, in a carriage which was all

broken; but he pretended that he was going to the assistance of Napoleon, with his troops. His sister-in-law received him, and gave him all she could to help him—changed his travelling carriage, giving him the handsomest she had—and, after having refreshed himself, he set out, pressing her hand with the greatest friendship. I remember enough of the detested Latin to say, "Quæque ipse miserrima vidi;" though I cannot add, "quorum pars magna fui."

She left Florence, and I returned to Rome; where I finished the works I had begun at Florence, and sent them to the person charged to receive them, being punctually paid. But after having become accustomed to a Court, and tasted the fruit of my labours, for which I had been royally paid, it seemed to me hard to be obliged to work again for dealers; and so much the rather, as I began to learn that I was more famous out of my country than in it. And what contributed to make me angry was, that Napoleon having made a decree that there should be sent to him four Roman engravers of cameos, *Professors* of the Academy of St. Luke,—at the time I was in Florence with the Princess Baciocchi,—Canova, who was the president, chose four engravers, *made them professors*, and left me out. As soon as I arrived in Rome, I went to complain to Canova; who answered me, that they did not make young people of my age professors,—as if none but old people had any talent! This vexed me very much, and I exclaimed, in the words of Scipio, "Ingrata patria, nec mea ossa tenebis" ("Ungrateful country, you shall not have even my bones.") *

It happened, just in the midst of my anger at this piece of injustice, that Bonelli, whom I have mentioned before, arrived from England. Having immediately given me a great quan-

* Pistrucci was a man of his word; he lies buried at Christchurch, Windsor.

tity of work to do, he jokingly said to me, one evening, "Why do you not come to England? That is the country to live in. Come, come!" I, who at that time could speak no other language but my own, thought it would be a great convenience to go with one so much accustomed to English as he was, and whom at that time I thought honest. When I returned home, I mentioned it to my wife and mother, and, consulting together, they persuaded themselves to it, since I promised not to stay away more than a year. So, when I again saw Bonelli, I told him that I would accept his offer; and that I would set out with him in a few weeks. Everything was prepared. I settled the affairs of my family, leaving them sufficient maintenance for a year, that they might not be in want of anything; and started direct for London, after embracing my wife, my mother, and my five children, in hopes of seeing them again in a year.

At this time my brother Philip was in Perugia; and, as I wished very much to see him before quitting Italy, I went by Perugia with Bonelli, in order to bid him adieu. Having arrived there, I embraced my brother, and remained half a day, for the express purpose of our being longer together, as we were very fond of each other; and I so persuaded him, that he very soon decided to accompany me to England. As we proceeded on our way, we sang verses; from time to time asking of Bonelli information respecting England. My brother perceived, more than I did, that he often contradicted himself, and he, whose memory was more retentive than mine, remarked everything. So that, one day, having arrived at Turin, my brother said to me: "If you go with this rogue to London, he will make you his slave perpetually. He is a man that does not please me. Who knows what intent he has upon your talent? I advise you to leave him." I treated all this as nonsense, so great was my blindness, and the

confidence I had in him; and my brother replied: "Well, I will go with you as far as Paris; but if you go with Bonelli into England, I pity you." Upon this, I opened my eyes to the tenor of Bonelli's discourses, and I began to be persuaded that my brother was right. So that—having arrived in Paris on the last day of the year 1814—the next morning, when I wished Bonelli a happy new year, I told him I wished to stay in Paris for a little while, and would then come to London at my leisure. My brother told him the same thing: upon which, Bonelli, becoming furious, gave orders to the innkeeper not to let my trunks be taken away, because he had made a contract with me that I should go to London with him.

I leave you, reader, to judge of my embarrassment. Neither I nor my brother could speak a work of French, nor did we know any person who could assist us to finish our business with this rascal. Most insidiously, he had said that he left Rome without any ready money, and I had defrayed all the expenses on the road; on which account, it was of great consequence to me to come to some settlement with the gentleman. I had made a contract with him to cut for him two cameos, which I had begun in Rome, before I thought of setting out for London, and it was not specified where they should be done; it being at my choice to do them in Italy, France, or England. Therefore, though the deceiver went to a magistrate, to swear that I had promised him to do them in England, it was of no avail: and, after four days of litigation, he was obliged to return me all. When the accounts were balanced, there remained to him the cameos; because he did not wish that I should finish them in Paris: and the affair being compounded, he set out for London. But, before his departure, he sent me word that he wished to see me, and said to me: "I will lay any wager you never set foot

in London."* I smiled, and gave him my word that to London I would come; and so we took leave of each other.

By this time my name was known to the connoisseur collectors. The Baron Roger came to see me, as soon as he knew I was in Paris; likewise the Marquis Dedre, Mr. Daran, Mr. Simon, Mr. Aglië, Mr. Beck,—all cameo-amateurs,—and also some dealers, telling me it would be a fortune to them to get me to work upon many stones of great value, which they had; and in this way they detained me. But my brother got tired of Paris; and one day, having settled all his affairs, so as to set out either for London or Italy, he cut two pieces of paper like lottery-tickets, and putting them into a hat, in presence of many friends, he pulled out one, exclaiming, "Italy!" on which he left me, and set out the day after. I remained to work. But, in a short time, to the great surprise of all, we heard of the landing of Napoleon in France, from the Island of Elba; and I found myself confined during the hundred days, without being able to pass either into England or Italy,—working at my cameos, in the midst of the theatre of war.

I must here pass over many things. But, everybody being acquainted with the course of events at that time in Paris, it is useless for me to describe them. I will, therefore, only say, that I made a model in wax of Napoleon—though not from a sitting; but I had many opportunities of seeing him very well—at chapel, in his garden, and in public, when he reviewed his troops—so that, always comparing him with the wax model, which I kept in my pocket on purpose, with a little trouble, I at last completed a portrait which was con-

* It will be seen what steps Bonelli took to prevent him; but, cunning and wicked as he was, he was ignorant of the protection which the English constitution extends to foreigners as well as to its own subjects.

sidered extremely like, and was, I believe, the last portrait of him taken in Europe (115). As soon as Napoleon had departed to St. Helena, and the Allied Sovereigns had entered Paris, I set out for London, furnished with a passport signed by all the ministers.

* * * * * * * *

Here ends that part of my life passed on the Continent—at least, the most remarkable facts; and here begins my career in England. And I am induced to describe it more particularly than the former part, which to have given minutely would have taken up too much time; and which, though it might have been some amusement to myself to relate, would have been of little interest to the reader, who would scarcely care to be made acquainted with all the circumstances that came to pass, or with how many vicissitudes and dangers my life was attended, though a private and honest one.

Being furnished, then, with my passport, in due form, I packed up my tools; I put into my pocket one hundred napoleons in gold, and a letter of credit for twenty louis, of which I shall speak presently; I took six cameos, done by myself in Italy, among which were some with a great deal of work; I took, likewise, a quantity of polished stones; in short everything I could want. And, gay and contented, I mounted the diligence, thanking Providence, which assisted me to continue the journey I had proposed when I left Rome; having sent more money to my family, who were satisfied that I should prolong my absence, which had for its sole object the hope of bettering their condition by my honourable labours.

Here begins, as the reader will learn, a series of catastrophes, which crowded on each other—loss of children, excessive ingratitude; in short, a world of many pleasures mixed with extreme bitternesses.

I arrived safely at Calais, with five French passengers—

two men, three women. One of the men was a leech-merchant, and had three corn-sacks full—therefore we had no fear of dying from a superabundance of blood; the other was a quail-merchant, who kept me laughing the whole passage, for he was quite a buffoon; the three others were French milliners, of whom I shall say more by-and-by. I arrived safely at Dover on a Sunday, towards evening. We had scarcely entered the port, when two people came into the vessel and demanded our passports. I presented mine; and scarcely had they read my name, when they took me by the collar of my coat, and made signs that I should go with them, —a compliment which did not much please me. I was conducted into a room which was very dark—it being now almost night. They asked my name, which I immediately gave them: they then told me, in bad French, to give them all my letters. I immediately delivered up my portfolio, in which were only three: one directed to Mr. König, Mineralogist of the British Museum, another to Mr. Milinghen, and the third to Lord Fife. They were not satisfied with these, but demanded others. I told them I had not any; and, seeing they did not believe me, I emptied my pockets on the table, pulling out my cameos, stones, watch, handkerchief, and money, but they were not persuaded, and almost undressed me in their search. Whilst I was undergoing this rigorous inquisition, one, who was writing, asked me if I knew Mr. Bonelli. I then recollected that he had said to me, in Paris, that I should not set foot in London; and I asked the officer why he put that question to me. He replied, laughing, "I ask you if you *know* him?" I answered, "Yes." They then looked at me well, both of them; as if they had said, Do not let us make a mistake; and then, laughing, they returned me my portfolio, money, letters, and handkerchief; but the stones and cameos they put into a box, shut with lock and key, and,

without saying anything, left me in that chamber, in the dark. I thought that they were gone to get soldiers to take me to prison; if, indeed, I were not already in one—for no one had told me it was the Custom-house. Remaining here for some time, and not seeing anybody come, I wished to assure myself whether I was a prisoner or not; and, trying the door, which I thought locked, it opened immediately,—which encouraged me a little. At the end of the passage, I found a man, who said to me: "Sir, I am waiting to conduct you to the inn." I then thought "the inn" might be a prison; but, as those who are not guilty seldom give way under misfortunes, I followed him, though melancholy, and thinking he might deceive me. He, however, conducted me to an hotel, where I found my fellow-passengers—the leech- and the quail-merchants, and the three Frenchwomen—with a German, who told me he was a pianoforte-maker, who was waiting for his passport (which he had left in London) to go into France. This good man sympathised very much in my mischances, and told me, from what he had heard, that they had set me down as a spy of Napoleon's, otherwise they would not have treated me in that manner. Afterwards came the French captain, who said he knew for certain that I was a person suspected by the government. I laughed at all that was said; but, notwithstanding, being in a strange country, without friends, not able to speak the language, and ignorant of the difference of forms and customs between England and the Continent, I was much embarrassed. And so much the more so as they had taken all my cameos and stones, which I had hoped would prove the means of making me known. So, after having conversed some time with those people, I retired to my room, to meditate how I should regulate my conduct in future. I did not sleep the whole night; and, in the morning, a gentleman, Mr. Casanove, offered me his assistance, and we

went to the Custom-house together, in order to have my trunks searched. Scarcely had we arrived, when they turned out all my tools, which had cost me so much trouble, spoiling them in the fall; they pierced all my trunks, to try if there was anything concealed, telling me that I must estimate the value of all, in order to adjust the duty. Besides which, as there were some models, in wax, of cameos that I had made for Bonelli, I feared they would break them. Not content with having ransacked my trunks so thoroughly, an officer of the Customs, who spoke Italian very well (doubtless an ally of Bonelli's), thought fit to explore them all over again, by which my tools were still more injured. But, fortified with the patience of Job, I put them all again in the best order I could, demanding always that they should forward the whole to London. But they told me they could not give me a passport for London, unless there was some one who would answer for me here.

I began to be again troubled, for I did not know any one. The poor German piano-maker tried to console me; and persuaded me to go out walking with him and the French ladies, in order to divert myself. In about an hour we returned: soon after which, the ladies came to me, quite furious, telling me I had been the cause of their ruin. I asked them why; when they told me that they were milliners; and, after having passed a quantity of lace, which was contraband, the Custom-house officers had come to the inn in their absence, and, examining the goods of all, had taken away their property; some worth 12,000 francs, the rest worth 16,000 francs. I answered them, that I was very sorry; but what had I to do with it? They said that if I had not been so much suspected, there would not have been so rigorous an examination of their packages; it being thought that, having passed the sea with them, I had given them some letters to keep,—in searching for which, the

lace had been found instead. I had much ado to persuade them that I was not guilty. They did not again ask me to walk with them; and thus finished their zeal and their friendship for me; but the German did not alter.

In the meantime, I wrote to Mr. Milinghen—who, I knew, had seen me in Rome, or at least heard of me; and he was kind enough to forward me a passport. But now another freak of fortune befell me. The poor German, to cheer me for the loss of my stones, used always to take me out with him to walk. One morning we were walking on the hill, and found ourselves, while talking, in the midst of the fortifications; two soldiers came out, with their swords drawn, who, halloaing out, ran towards us. Neither of us understood a word they said. Placing us between them, they marched us forward. I said to my companion, "What new chance is this?" He replied, "We are arrested. They take us for spies." "But this is a good joke," said I; "this is the walk you made me take, to cheer me!" In the meantime, having walked a long distance on a road quite different from the one by which we had come, we found ourselves in the city of Dover, where the soldiers left us, without taking leave; and so terminated this adventure. In the meantime, the kind Mr. Milinghen became security for my person; and I obtained a passport for London, in despite of Bonelli, and to his great mortification, as you will hear by-and-by.

I set off immediately, and arrived early the next morning at Brunet's Hotel, in Leicester Square; soon after, I went out to walk about a little, accompanied by a *valet de place*, in hopes of meeting some Italian, who might advise me what I should do to recover my stones from the Custom-house. But when one misfortune happens to a man, others always come in succession. In fact, all the Italians I met were friends of Bonelli, who were already acquainted with what had befallen me; and,

instead of advising me to stay, they tried to persuade me to go away directly, because "Signor Bonelli was a man very powerful in London;" and hinted that if I mentioned my suspicions of his having declared me to be a spy of Buonaparte's, I should be severely punished. In short, they did everything they could to get me away; but I was firmly resolved to stay in London until I had not a penny in my pocket, and, as I told these gentlemen, then I would be taken away dead, and not while I had life.

In the meantime, Bonelli and his clique spread horrible reports concerning me, and did everything they could to drive me to desperation. So great was my annoyance, that I did not recollect, for more than two weeks, that I had the letters for Mr. König and Lord Fife; but they were from some private friends of theirs, and not letters of recommendation for me. And my own urgent affairs had made more impression on me than those of others, as I believe is the case with most people. However, I at length determined to deliver them. My Lord Fife was in the country; but, fortunately, Mr. König was in London, and read the letter—which was from the Marquis Dedre—in which he spoke of mineralogy; and, at the end, he said, in a postscript, that the bearer was a most excellent—I repeat his words—cameo-cutter.

This gentleman, who is a lover of the fine arts, was polite but cold; and I found him very reserved with me. He asked me if I had had a good journey. This gave me an opportunity to relate to him all that had happened to me. He asked me where I lived, and I gave him my card. He said he should be happy to do anything in his power for me. Never could I have thought that a man, having spoken to me only once, should have taken so much interest in me, as I experienced afterwards. And here I will say that, till the hour

when I first saw him, I had never met, in the whole course of my life, any one to compare with him. In one and the same day, he came four times from the British Museum to my house, to see me: the last time coming at midnight; and, hearing that I was not yet come in, he left his card, on which was written in pencil, "Come to me early to-morrow morning."

That evening I had gone to the theatre with one Ricco Romano, from Portugal, an excellent friend of mine, whom I had known many years; for whom I had made a number of cameos,—for he traded in them; and who was one of the most honest dealers in pictures and stones that I have ever known.

When I returned to my hotel in Leicester Square, the master of it told me that a gentleman, who was very anxious to see me, had been there four times; he then gave me the card, from which I at once saw it was Mr. König. I retired to my chamber, and began to think what this gentleman could want with me. It could be nothing good, for everything was going ill. In the morning, however, I went to the Museum, and he gave me a letter to Mr. Charles Long, recommending me to take it to him immediately. I did so; and that gentleman was extremely polite, and told me to wait while he wrote a letter; which he gave me directly, and directed me to go with one of his servants to the Treasury. I was there asked many questions, and I related exactly what had befallen me. I said I had put the cameos in my pocket, because they would not have been so secure in a trunk, and also that the Custom-house officer had asked for my letters, and not for my cameos; that I had laid them on the table of my own accord. After some time had passed, they put me into the hands of an agent, named Noseda; and this gentleman acted for me. In the meantime, Mr. Webb, a great ama-

teur of cameos, heard I had arrived, and, without knowing me, sent me an invitation to call at the house of a Mr. Charman, the owner of a shop for gems and other articles of *virtù*, at the corner of Albemarle Street, Piccadilly, in order that he might assist me; telling him that whatever time he might expend with me, Mr. Webb would repay him. He made me an offer of money, if I wanted any; but this I refused, as I still had some left. I mention this to show what kind people are to be met with in England.

To return to Mr. König, whom I had not seen since my interview with him at the Museum, he having been in the country. One night, about ten o'clock, he came to me, to give me notice that Sir Joseph Banks wished that I should model his portrait in wax. I was then living at No. 8 Panton Square; and, unfortunately, was confined to bed with a violent inflammation on my chest and a spitting of blood. He asked me who was the physician that attended me. I told him, not any; for I did not know one who could speak the languages I spoke. I did indeed know a Dr. Desantis, an Italian; but, as he was a friend of Bonelli's, I took care not to send for him. Mr. König said it was impossible I could remain in that state without a doctor. I told him I drank a great deal, but ate nothing; and, saying that would not do, he went away. It was an evening on which there was such a frost, that it was hardly possible to walk; but not being able to come in a coach, for fear of the horses falling on the ice, he went on foot to Dr. Sims, and, about midnight, they both came—he as an interpreter. This good doctor examined me well, and immediately said that I must lose a great quantity of blood. I already thought I was gone past cure, and I told him so. He answered me, through Mr. König, that I should not die this time, if I followed his directions: and, for eighteen days, he visited me, and so cured me entirely. Mr. König had the patience to come every

day with him, in order to interpret. Such as these are real friends, and I have not terms to express my gratitude, though I shall never forget them.

As soon as I was re-established, I went, with Mr. König, to Sir Joseph Banks. Whilst I was modelling the portrait of Sir Joseph, I met Mr. Knight—a great connoisseur in gems, cameos, and intaglios, bronzes, statues, medals, and antique vases; the same person who, with Mr. W. R. Hamilton, made the valuation of the Elgin Marbles; and also well known from the books he has written, and for his cabinet full of precious things. This gentleman came to show a cameo—a fragment, representing a Flora (121)—to Sir Joseph Banks. He looked at it minutely, and praised it much. I begged the antiquarian to let me look at it. He assented; and as he stretched out his hand, with the fragment, towards me, I said, "That is my work;" and did not take it in my hand. Mr. Knight, who spoke several languages very well, understood what I had said, and replied in Italian, "That is not true! Look at it well. You are mistaken!" and he became immoderately angry, and repeated several times, "This is the finest Greek cameo in existence." Without taking any notice of his having treated me as a liar, I said to him, laughing, "I thank you, sir, for the compliments you pay me." The celebrated antiquary grew still more angry, and said something, in English, to Sir Joseph, who stood with his spectacles still on his nose, looking at both of us. Sir Joseph again examined the cameo; and then, turning towards Mr. Knight, became angry with him. I asked Mr. König what they were saying. He told me, in French, that Mr. Knight said to Sir Joseph, that the wreath of flowers round the head of the Flora was a further proof that the cameo was antique, because the flowers were different in form from any modern ones, and that the seed was lost. Sir J. Banks replied,

"By G—! they are roses,—and I am a botanist!" Then Knight turned his face towards me again, and began to cross-examine me,—which was a new thing to me, as it is not the custom in our country,—and said very sharply to me, "For whom did you do it?" "For Angiolo Bonelli." "How long ago?" "About six years." "How much did he pay you?" "Twenty Roman crowns" (under 5*l.*). "What stone is it?" "It is a *breccia di carniola*" (carnelian pebble). "How long were you doing it?" "About eight days." "Who had it set in the form of a ring?" "I myself." "For whom?" "For Angiolo Bonelli." "But I think you are mistaken." "Certainly not." "Look at it well." "I do not want to look at it. I remember it as if I had done it this moment. However, if *you* will look well on the top of the head, you will find, upon a twist of the hair, a letter, which is my private mark. And if not there, it is only a proof that Bonelli, having perceived it, has erased it."* "That is no proof. You may have got it done; and it may not be your work." "Why should I have got this done, when I know how to do much better?" "I do not believe it. You may say what you please." "It is of no consequence to me. These hands can convince you." "I should like to see." "But many persons in Rome remember when I began it and when I finished it; and I have the original model at Rome, in my house." In short, after repeated examinations, he gave in, and said, "You will leave England loaded with riches: and I will be the first to tell my friends that you are an extraordinary man." He gave me his card, telling me to come and see his collection; where, perhaps, I should find many of my own works, "since," he said, "I have

* He had not, however, and it is still there: two small lines, converging at an angle, forming a Greek Λ. The Roman *P* or Greek Π would not so easily have escaped observation.

been deceived in this, which I thought the finest." Sir J. Banks laughed so much, that he could not stop himself. Mr. Knight went away like a drowning flea ("pulce bagnato"), and I sat down again to work at the portrait. Sir Joseph advised me to go and see him soon, because he was a man who might be of much use to me. I went the next day, and found him very polite. He did not show me my cameo any more; but displayed all his beautiful things, which really pleased me. What I thought best of all were two or three little figures of antique bronze, which are quite precious things. I returned home, and thought nothing more would be said concerning the fragment. But the antiquary had already united himself with Bonelli, to make me pass for an impostor; the one that he might not appear a rogue, and the other that he might not appear an innocent.

The reader must know, then, that one morning, very early, Mr. Knight came to my house in Panton Square, and said to me, "I have been at Bonelli's, and begged him to tell me the truth; I said that I pardoned him the deceit he had practised, as I had bought the gem according to my own judgment, and did not want him to return me the *five hundred guineas* I had paid him; but that I wished to know from him the story of that stone, in order to come at the truth. He replied, that you were an impostor and a liar; and that he could prove to me where he got the gem, for he had bought it in London, at a public sale. I now come to you, because I do not wish to prejudice the honour of Bonelli, as I think him an honest man; and I wish that you should give me better proofs than you have yet done whose work this is." I can contain myself, for a certain space of time, with the patience of Job; but if I lose it, unfortunately for me, my discretion goes likewise. I made him no answer; but placed before him a number of stones of all sorts.

I told him to choose one to his liking, and promised that he should soon have another Flora, without my looking at his. The astute antiquary said to me, "That will be no proof; for you may have some impression of my antique cameo, and may copy it exactly; because I know you are an excellent engraver." "Well," said I to him, "then what is it you wish I should do?" "What I wish," said he, "is this: that you should make a subject like this, but differently treated,—that is, that the head should be differently dressed, and the flowers differently arranged." I replied, "With all my heart! I will begin a model immediately." He went away, and I began a model the same instant. Mr. Knight came again to me in three or four days. But when he saw that the model was more beautiful than the cameo which I had cut six years before, he withdrew, and came no more to see me (152).

The journals now began to speak of me—some favourably, some against me—in an incredible manner; and as I could not read them, my friends told me their contents; and really those which tried to make me out an impostor were somewhat annoying. But Mr. Knight and Bonelli, instead of doing me harm by the reports they circulated concerning me, did me much good, as gentlemen became anxious to know me; and my house was always full of persons of distinction, who wished to hear the circumstances and judge for themselves. As soon as I had finished the model, I went one morning to my antiquary, with a bag full of all kinds of stones, and my model completed. He looked at the model for more than a quarter of an hour, and then said to me: "This is beautiful, but it is in wax; I should like to see it in stone." I told him, if he would give me time, I would let him see it. I showed him all the stones, but he did not find any to his mind; perhaps because he wished for one upon which diamond-dust would make no impression. I tried

to make him understand that these stones were—after the sapphire, diamond, and ruby—the hardest that were known; and that the stone on which I had cut the fragment of the Flora for Bonelli was a very delicate stone, as are all the *breccias* of carnelian,—which, although hard, have so fine a grain, that the pounded diamond, with the friction of the turning of the wheel, reduces it into a white dust; it is the stone of all others that engravers prefer. Still, nothing persuaded him; and he began to ask me other questions, and said, "I have looked at my Flora, and I find that amongst the hair there are brown marks of the earth in which it once lay buried."

I replied, that if he judged cameos to be antique from the dirty stains only—called by the dealers "patina"—he would be often deceived; since I could tell him, for his information, that the *patina* on my cameo—which he called Flora—was nothing but some iron-filings dissolved in aquafortis,* in which I bathed the surface of the stone, and then dried it with a high degree of heat from the fire. "But," added he, "these little stains which are over the white,—we know that these are produced by time." "No, sir," replied I, "you are much deceived; for the fact is, that the *breccia* of carnelian, when it has the white too bright, is very often darkened,—that is to say, with iron; not to make it look old, but to tone down the glaring white,—like your Flora. To show that you are deceived," added I, "you think you possess a fragment, and I can prove to you that it is an entire cameo." "But is it *not* half a face?" said he. "Yes, sir," said I, "half a face, but a whole cameo." "But how?" "This I will explain; if you will permit me to loosen it from the gold which covers the supposed fracture, you will see that it has not a fractured surface, but is cut." "How?" "The stone, although broken by accident, was ground smooth

* See page 148.

on purpose to fit the setting." "But why?" "Because there was only that piece; and if it had been hammered to make it fit, it might have fallen in pieces, and there would not have remained sufficient white for the work." Nothing more was said of unsetting the stone, and I think it will never be done as long as it remains in the same hands; but as there is not a more convincing proof in the world than this last, I do not think any one that knows it will ever come to the test. This conversation—somewhat serious—finished with his telling me that *he* would *bring* me a stone; but I waited three or four weeks, and the stone never came; so, not being able to endure any longer that people, who did not know what I could do, should consider me as a cheat, and seeing every day some new remarks in the public prints offensive to my character, I decided not to wait any longer for the stone,—which I believe I might have expected till now.

[Poor Payne-Knight was much to be pitied. A man of position in society; a member of Parliament, when members were worth as much, at least, as they are now; a scholar, and of no mean talent as a poet; thwarted in his dearest passion; conscious that his reputation amongst connoisseurs (King says he was their "Magnus Apollo") was threatened, if not already tainted,—he never could forgive the innocent cause of his misfortune, and became ridiculous by his attempts to disprove the simple truth.

First, he changed the name of the gem to Proserpine, as if the ghost of Flora could by that means be laid; and, notwithstanding the explanation of the leading botanist of that day (see page 183), he persevered in saying that the flowers were pomegranate-blossoms (though his first assertion, quoting Bonelli, was, that they were of a lost species, like the lost

tribes of Israel); whereas, every person who is either botanist or florist can see that they are roses, poppies, and marguerites,*—the predominant, conspicuous ones, roses; and though he showed the gem at first to every one as a wonder of Greek antiques, under the name of Flora given to it by Bonelli, he turned round saying that Flora was not known to the Greeks. But what of that? Had it been really an archaic Greek work, we know from Anacreon that the beautiful girls loved by him, by Alcibiades, and others, wore roses in their hair, whether they were called Flora or Phyllis. He repeats the assertion, that the patina in the creases of the hair (which he calls cracks—"fracturis") was the result of long interment under the earth, though the artist explained to him that it was put on merely to soften down the glaring white (page 186), and which patina, being but slight originally, has been cleaned off since it came into the British Museum, by manipulation in taking impressions and washing.

But let us quote his own words from the Catalogue, which he wrote in Latin, of the gems presented by him to the Museum, and see whether some of the harsh epithets he indulges in may not be deservedly flung back upon himself,—such as "stultitia," † "impudentia," "mendacium:" ‡ it is difficult

* The flowers in the wreath were modelled from some selected out of a bouquet of his wife's.

† "*Stultitia:*" the folly of persevering (against such overwhelming evidence) in the assertion that a modern work was antique, and not being able to distinguish roses from pomegranate-blossoms. The larger flowers in the wreath (121)—the roses—are very unlike pomegranate (*P*) blossoms, which have only *five* straggling petals when full blown, and the bud is evidently different. Neither could the poppies be mistaken for pomegranate, as they have distinctly only *four* petals. The poppies in the wreath are the pretty little *papaver hybridum* of the South of Europe, of a violet-red colour, and much smaller than the English poppies, *papaver rhœas*. Neither could the marguerites be mistaken.

‡ "*Mendacium:*" but we will not insist upon that as a wilful charge; it must have been that "ira, furor brevis" (anger which maddens a man),

to know the force of his allusion to "Mr. Ainsley," "Constantinople," or the comparison of "other works of the same author:"

"Proserpinæ caput, facie sinistrorsum spectante, floribus "multifoliis et ramula frutescente balaustii sive mali punici "coronatum, et strato albo, onychis Indicæ nodulis rubris pel- "lucidis distincto, alii pellucido rubescente inhærente, alte "exsculpturis, arte et felicitate eximia, quâ flores naturalem "suam formam et colorem a nodulis adepti sunt. Deperditum "est collum, lapide sub aurem perrupto. E foliorum formis "et ramusculis frutiscentibus plane liquet, flores mali punici "esse, non rosas, ut B. Pistrucci, gemmarum scalptor, qui "lapidem hunc se suâ manu scalpsisse gloriatus est, prædi- "caverat; et se eas ad vivum imitando expressisse, pari *stul-* "*titiâ* et *impudentiâ*, asseruit; atque Floram ita ornâsse "voluisse; quæ dea Græcis incognita fuit. *Mendacium* "planius arguit mutatata vetustate superficies, præsertim in "fracturis silice et calce adhærente, et nota quamplurima ejus "opera cum hoc collocata, quæ Robertus Ainsleus Constan- "tinopoli obtinuerat."]

One evening, having two or three friends in my house, who advised me to begin a cameo directly, I resolved to do so; and taking a carnelian *breccia*, and breaking it into many pieces, I chose one fit to make another fragment of a Flora. The next morning I began it, with the courage that inspires a horse which has always conquered in the race. In two or

made him regardless of his assertions. (What a good example of "Dum pœnas odio per vim, festinat *inulto*"!) It is, however, degrading to Payne-Knight himself to have used the word "*impudentia*." It was Bonelli, not Pistrucci, that gave the name of Flora to the pretty girl with the roses in her hair (*καλοὺς ἰουλούς*); Payne-Knight gave her an *alias* (Proserpine), which is never a very reputable thing,—but he went blundering on, till at last he sank in the quagmire of the above Latin description.

three days I had got it so far advanced, that any one might judge I knew very well how to do it; and many people came to visit me. The news began to spread, that the new fragment was better than the one which belonged to Mr. Knight; and many of the nobility came to see the work in question (152). In the meantime, Sir Joseph Banks—who was more than ever convinced that I was not an impostor—ordered from me a model in wax of the size of a sovereign, with the portrait of his Majesty George III.; and, as I could not get a sight of his Majesty, he gave me, as an original, the *three-shilling* piece of Marchant;* which I was to *improve in style*, but to copy exactly as to *character*. I made the little *model* according to order; but it was impossible to make the wax look like a stone, because, the work being so shallow, it was almost transparent, and did not upon the black slate show the delicacy of the art. Sir J. Banks, being convinced of this, ordered one in *pietra dura;* and I selected a red Oriental jasper, which is the stone most adapted to such things.

About this time, Sir J. Banks took me in his carriage to Lord Spencer, and introduced me likewise to her ladyship, who spoke Italian remarkably well. She was very polite to me, and showed me an Oriental onyx, the finest I had ever seen. She then showed me a large model in wax of a St. George, done by Marchant, and said to me: "My husband

* Modelled by Marchant, but engraved by T. Wyon. This celebrated gem-engraver, Marchant, was employed by the Royal Mint, not as engraver of dies, but, under the appellation of Probationer,† or Designer, to make models for Wyon, the engraver, to copy; as Pistrucci was engaged afterwards, before he was appointed Chief Engraver. (161) is the "three-shilling piece," by Wyon, from (164), the model which Marchant made from life; (162) shows the coin which Pistrucci engraved from his own jasper imitation of it—improved in style (*i.e.* proportions and intelligence), as ordered by Sir Joseph Banks; and (163) is the coin which T. Wyon engraved from the same jasper.

† *Ruding*, i. 45.

would like you to make a model in wax, of the same size and subject: *but I should like it in the Greek style*, as that was the style in which naked figures were done; and the *mantle*, in this beautiful white, would have a superb effect: it would be throwing the stone away to make a figure upon it dressed in Gothic armour." I was much pleased to hear her ladyship reason so well concerning the art, for I could not have brought forward more convincing arguments myself. In the mean time, I finished the head of George III. in jasper, before mentioned; and Sir Joseph Banks paid me fifty guineas. I began ag—

* * * * * *

Here breaks off the autobiographic manuscript; and for many years after this epoch, his relations with the officials of the Royal Mint became too complicated and dreary for it to be agreeable to commit them to paper; we must, however, from memoranda, endeavour to fill up the blank.

His progress in London, with men of taste and collectors, had been rapid. Such connoisseurs as Hope, Webb, and even Payne-Knight (though annoyed), discerned his talents; and he was making money rapidly. But the most useful acquaintance, or rather friend, that he made, was Mr. W. R. Hamilton, who had been so instrumental in the rescue of the Elgin Marbles, and whose fine taste, talents, and penetration led him to form a rapid and just estimate of the high character of the Roman artist and gentleman, which produced a mutual esteem, that strengthened and increased until the end of their long lives.

Sir Joseph Banks, who admired and supported him during the struggle with Payne-Knight, caused him to make the portrait of George III. in a jasper cameo, mentioned above, with the palpable intention of using it as the means of an in-

troduction to the Royal Mint. Accordingly, in 1816, he presented him to the Master of the Mint, Mr. Wellesley Pole (afterwards Lord Maryborough), a cabinet minister, who consulted him upon various subjects relative to the new coinage, and gave the jasper cameo of George III. to be copied on the half-crown (163), by T. Wyon, the Chief Engraver; but the work proved inferior to Pistrucci's model, having such a "ferocious* expression" that it was disapproved and changed. Pistrucci having suggested St. George and the Dragon as a suitable subject for the reverse of the new gold coinage, he was commissioned by the Master to execute a cameo of it in jasper, to be copied; for which he paid him, by agreement, 100 guineas.

At this juncture (1817), T. Wyon died; and from the ill-success of the copy of Pistrucci's George III. by T. Wyon, and the improbability of any other person in the Mint being able to copy the George and Dragon, the master considered that it would be necessary to employ Pistrucci himself to engrave both subjects on the dies, and offered him the post of Chief Engraver—vacant by the death of T. Wyon—with a salary of five hundred pounds per annum, and one of the houses within the walls of the Royal Mint appropriated for the officers of the establishment.

This was a good bargain for the Master, considering that for a work which occupied Pistrucci perhaps ten days or less he had paid him one hundred guineas. It is true that, when not working for the Mint, he was to be permitted to engrave gems for his own emolument; but this never once occurred in four years, as during the whole of that time he was fully employed in bringing out the *new gold* coinage of George III., &c.; working unremittingly, sometimes for

* E. Hawkins, F.R.S., F.A.S., &c., *On the Silver Coins of England*, 1841, p. 249.

eighteen hours out of the twenty-four. He thus had no opportunity of gaining anything beyond his salary, in order to pay the expenses of bringing his family from Rome, and supporting them in London.

To relieve him in this unfair position, the Master hit upon the expedient of ordering the Waterloo Medal, as an extra work, to remunerate him in lieu of his making gems; the price agreed upon being three thousand five hundred pounds sterling, on the calculation that this medal contained as much as thirty or more ordinary medals, his usual price for which was one hundred pounds each; and there was advanced to him by instalments, in a short time, the sum of two thousand pounds.

The functionaries of the Royal Mint being a Corporation called "Moneyers" (an *imperium in imperio*), and being, like other London Corporations, very independent, resisted the appointment by the minister, on the plea that Pistrucci was an alien: though Nicholas Briot,* a Frenchman, had held the post in the reign of Charles I.: Roetier,† a native of Antwerp, in the reign of Charles II.; Dassier, in that of George II.; Pingo,‡ a Portuguese, during the time of George III.; and we may mention also the celebrated gem-engraver, Johann Laurenz Natter,§ born at Biberach, who engraved the Coronation Medal of George III., besides the coins.

* *Hawkins*, p. 164; *Ruding*, i. 44.

† *Hawkins*, p. 214; *Ruding*, i. 45.

‡ *Ruding*, i. 45; *Snelling*.

§ *Ruding*, i. 45. Both Natter and Pingo, though engravers in the Mint, were permitted, like the celebrated Coldorè, to visit foreign courts to execute portraits of sovereigns in medals and gems; as those of Frederick the Great of Prussia, and Stanislaus of Poland, by Pingo; and that of the Grand-Duke of Tuscany, and others, by Natter, who afterwards was Engraver in the Imperial Russian Mint, and died in St. Petersburg. Vide *Skitzen zur Kunstgeschichte der modern Medallien Arbeit*, Heinrich Holtzenthal: Berlin, 1840. Verlagh von Carl Hegman.

The officials eventually carried their point, as will be seen, against the Government; but it was a ruinous victory to them, as this circumstance—united to certain other reasons, carefully investigated in a Committee of the House of Commons—led to the abolition of the Corporation by Act of Parliament,—for which see the Blue-books of the period.

During the trial of strength between the Master and subordinates of the Mint, which lasted for some years, the office of Chief Engraver (although the duties were performed by Pistrucci) remained in abeyance, and the Corporation had sufficient influence to keep his name out of the Red-book, in which, opposite to the office of Chief Engraver, after the death of T. Wyon, there was a blank, the name of William Wyon continuing, as heretofore, as Second Engraver.

To return, however, to the Waterloo Medal. Here new embarrassments arose. It was proposed that there should be a *concours* amongst artists to furnish a *design* for the medal; but the Royal Academicians in a body nominated Flaxman, who sent in a design, which doubtless was excellent, as might be expected from the well-earned celebrity of the artist. But Pistrucci had a well-earned celebrity also; and as, after his studentship, he had not condescended to copy even the works of his venerated Greek artists, he declined the honour of copying Flaxman, and sent in his own model (143 and 144); which met with "unqualified approbation" from the virtual Sovereign, the Prince Regent.

Here, however, there soon occurred another difficulty. The Prince wished that his portrait by Lawrence should be copied by Pistrucci, on the obverse of the medal, with the other three sovereigns of the "Holy Alliance." But, no! Pistrucci—who could draw and *model* as no other artist in Europe, and who had made the portraits of other sovereigns

—would also model this one himself from life, or not at all.

Taking for granted that Pistrucci would obey orders, the Prince, without consulting him, had sent the Lawrence portrait to the Mint; but when the Master went to the artist's studio to see what progress was made, he found that it was *nil*, and that the portrait, in its massive frame, was turned with its face to the wall. He was threatened with dismissal for contumely,—but all in vain; he was firm; and as they could not carry on the coinage without him,—and, besides, if they had dismissed him, the *two thousand pounds* advanced to him on the Waterloo Medal would have been an awkward item in the accounts to be laid before the Treasury, to be discussed by Opposition members in Parliament,—he was allowed to have his own way; and, in consequence, it was arranged for him to have several sittings for the wax model from the Prince Regent, who was affable and condescending; and the portrait was taken, for the Waterloo, the Coronation (130), and other Medals; the classical inscription upon one of them was, ΠΙΣΤΡΥΚΚΙ ΑΥΤΟΠΤΗΣ ΕΠΟΙΕΙ—"Done by Pistrucci from the life."

Without any fault of his own, Pistrucci had wounded the *amour propre* and interests of a great many persons, which it is necessary to explain, in order to account for the *animus* which existed, and for the reports to his disadvantage which were circulated. The Mint was opposed to him, because, a stranger, he was brought in in opposition to W. Wyon, one of their own body. The Royal Academicians were outraged and outrageous, because their recommendation of Flaxman had failed; and, again, the portrait-painter Lawrence—an influential man in the higher circles—had been disregarded. This invidious feeling spread also into other departments connected with the arts: for instance, the Society of Antiquaries, the

British Museum, &c. Mr. Hawkins, the Keeper of Coins and Antiquities in the British Museum, in his useful work (before quoted), says—

"A more intimate knowledge of the talent which already "existed in the kingdom, and even within the walls of the "Mint, would have saved Lord Maryborough from the "reproach of unnecessarily insulting the whole body of "native artists, and of inflicting, perhaps, a fatal mortifi- "cation upon a most amiable young man [granted!], and an "artist at least as talented [*not* granted!] as the stranger "who was placed over his head."

When Pistrucci was appointed Chief Engraver, W. Wyon, second and assistant to his late cousin, remained *in statu quo;* but he became in time an artist of considerable merit, in designing, modelling, and engraving the higher class of medals; (see 172), considered to be his *chef-d'œuvre,*—a medal executed for "Lloyd's," to be presented as a reward for the saving of life.

Mr. Hawkins proceeds: "The reverse of the crown (the "George and Dragon) was adopted from a gem engraved by "Pistrucci for Lord Spencer. The design was copied from "a gem by Pichler, which was itself copied from a shell "cameo [*Pichler copy a shell cameo!*], representing a battle, "in the collection of the Duke of Orleans. The shield— "which in the original was on the left arm of the figure— "was omitted."

This statement is the result of a misconception; for, whatever cameo of St. George and the Dragon Pistrucci may have executed for Lord Spencer, the jasper George and Dragon—purchased by Lord Maryborough for the coins—was an *original,* first modelled for that purpose in wax; and the *life model* who was employed was an Italian domestic in Brunet's Hotel.

Mr. H. continues: "The position of the right leg was

" purposely, but unfortunately, changed; for, as the hero now " sits upon his horse, he must inevitably fall to the ground " the moment he attempts to strike the meditated blow with " the sword." Now, Pistrucci, who had doated upon horses from his childhood (a perfect Φιλιππος), and who—as was said of Murat, and perhaps of many others—" rode like a Centaur," was not likely to represent a hero that could not keep his seat; on the contrary, every one can see on the sovereign, double sovereign (129), or crown-piece, that the rider sits perfectly straight and firm,—that the left foot is visible below the horse's belly, showing that the rider has closed his *left* leg to counterbalance the exertion of the *right* arm. Nevertheless, Mr. H. acknowledges: " The work, however, is beautifully executed, " and its appearance (which first occurred on the sovereigns in " 1817) was hailed with pleasure, and with the hope that " those who were in authority were weaning themselves from " their attachment to armorial bearings, and becoming alive " to the beauty, interest, and importance of historical (classical?) " reverses." After the death of Pistrucci the Mint reverted to its Gothic heraldry, for a time, but has since 1872 revived his George and Dragon on the sovereigns.

Friends often remonstrated with Pistrucci for showing his mode of working, and giving information, to all engravers who came in contact with him,—as, for instance, W. Wyon, and a clever young German (Voight), who came to London, and remained for about two years in Pistrucci's workroom studying, and who was immensely improved by him. His answer uniformly was: " I feel certain to surpass them all; therefore, the higher any one of them stands, he only elevates me."

The author does not for a moment mean to imply that Pistrucci taught W. Wyon to model; there is good proof of the contrary. Partisans have asserted that Pistrucci taught

W. Wyon to model in wax; and, on the other hand, that Wyon taught Pistrucci to engrave steel dies. But W. Wyon had gained prizes, gold medals, from the Society of Arts, for his wax models, before Pistrucci set foot in England; and Pistrucci had been *au fait* of die-engraving with his friend Girometti in the Roman Mint—for it was common then, as it is now in Italy, for gem-engravers to execute steel dies for medals. W. Wyon, though young, was a practised die-engraver, and subsequently distinguished himself—see (172). Pistrucci modelled in wax as no other person ever could, except, perhaps, Benvenuto Cellini—see (182,* 145 †), and the Waterloo Medal, a facsimile of the wax model; and it was impossible that two such artists could be in constant communication, as they were at their first introduction to each other by the Master of the Mint (Mr. Wellesley Pole), without mutually benefiting by seeing each other's productions and mode of working. These two amiable and talented men would, doubtless, have worked on together, if they had not been alienated by the unfounded, reckless, tattling misstatements of persons who were ill informed; for, if we could believe that they were conscious of the *misstatements* they uttered, we must have used a stronger epithet.

It was reported, as a proof that Pistrucci did not understand steel-engraving, that he used his lathe and diamond-powder on the dies.‡ Thus a piece of ingenuity of his own was turned against him; the fact being, as stated by Carlisle, the Secretary of the Society of Antiquaries (*fas est et ab hoste doceri*), "that he altered the *punch* § of the disapproved half-

* Wax model portrait.

† Wax model, afterwards engraved in onyx.

‡ Mr. King fell into this trap, *op. cit.* p. 275.

§ Postscript of Carlisle's *Memoir of W. Wyon*, p. 11. He says the "*die*,"—one of the innumerable "ignorances" with which Mr. Hamilton charged him. That die could not have been altered in this way.

"crown of T. Wyon (163) by the lathe," thus saving time and expense to the Mint; for the steel punch could not have been cut in the usual way with a steel graver without being first softened in the fire, which would have destroyed its surface, involving the necessity of its being worked and smoothed over again; but by means of the gem-lathe, the shoulder, one of the parts which gave offence, was cut away, and the remainder left ready for striking. Again, during the extensive gold coinage of George III., when the dies for sovereigns and half-sovereigns got *slight* scratches, scales, or other blemish in working,—which, under the previous system, involved the necessity of their being discarded and wasted,—he retouched and restored their evenness of surface by the lathe—thus saving expense to the establishment.

Another proof of his superior knowledge in working steel dies is furnished (*iterum "ab hoste"*) by Mr. Hawkins, who informs us: "No crown pieces have hitherto (1841) been "struck in this reign (Victoria). A very beautiful model "has been made by the Chief Engraver (W. Wyon), and has "received the royal sanction; but defective dies, or improper "treatment of them in hardening, have destroyed the labours "of the artist."* The same was the case "in the reign of "William IV."† Thus, from the time when Pistrucci was transferred from the Coin Department, the Mint had not for fifteen years been able to strike crown pieces for *circulation*, though Pistrucci produced abundance of them for two reigns. For in 1818 (George III.), the issue of five-shilling or crown pieces (by Pistrucci)—"the first crowns ever made current in that reign"‡—was, on the *first day*, 400 to each banker in London; so that, supposing there were then only twenty bankers (there are now about forty, independent of joint-stock banks), 8000 were put into circulation to *begin with*.§

* *Hawkins*, p. 260. † *Ibid.*, p. 256. ‡ *Ruding*, ii. 124. § *Ibid.*

The next issue of crowns (also Pistrucci's) was in the following reign (George IV.), 1821: "£31,284-worth (above 125,000) were actually minted."* Thus, in point of fact, from the commencement of the reign of George III., 1760, until after 1841, no crown pieces were *circulated* except those coined under the direction of Pistrucci. It is true that, "to satisfy the avidity of connoisseur collectors,"† it was managed to strike a few proof pieces, in the manner of medals, in the succeeding reigns, which were purchased at a high premium, to the benefit of dealers; but there was no *circulation* of five-shilling pieces, to supply the public, until after the remonstrance of Mr. Hawkins. These crowns, for which they of the Mint could not harden and finish the dies, weigh only one ounce; but Pistrucci hardened and finished dies for medals of George IV. and the Duke of York weighing five ounces, and one of her Majesty weighing above twenty-five ounces! (158) is a reduced photograph of it, the original measuring three and a half inches across: both this and the Coronation Medal, of which it is a facsimile, were executed from his wax-model portrait, taken from life. But Pistrucci was an adept in hardening as well as in engraving dies. Small ones are easily hardened by being made red-hot, then plunged into cold water, and moved about. There is more difficulty with larger ones,—as those for the five-ounce medals; but a die for a medal weighing twenty-five ounces would be such a mass of steel,—weighing, perhaps, fifteen or twenty pounds,—that, when heated red-hot and plunged into water, it would instantly generate a volume of steam, which, surrounding the die, would prevent the cold water from touching and hardening it, as it could not be moved about by the hand with sufficient swiftness; so that it requires a rapid stream to carry off the steam, and at the same time apply a constant

* *Ruding*, ii. 128.

† *Hawkins*, p. 256.

succession of cold water to touch and harden the die. He effected this by the construction of an apparatus in his studio consisting of two cisterns, one higher than the other, communicating by a wide tube with a sluice, which could be opened instantaneously. When the enormous die was red-hot, he took it from the fire, and held the glowing mass in the stream, which swept away the steam, and chilled, and so hardened, the steel.

If these two fine fellows, W. Wyon and B. Pistrucci, had been left to themselves, they would have pulled together harmoniously,

> "And worked and shone with sweet consent,
> Till life's short, transient course was spent;"

but "Malaprop, Candour, and Sneerwell" set to work, and got up stories as probable as "Miss Jemima's twins," and so produced alienation. Thus Mr. Carlisle came out with the "three black crows" that Pistrucci, for three jasper models of George III., had received the enormous sum of 1325*l.*; now, if the gentleman had possessed only a moderate share of common sense or penetration, he must, on a moment's reflection, have perceived that his informant was hoaxing him. For, Pistrucci's price for the jasper George and Dragon (a much more elaborate subject), paid him by the Master of the Mint, was but 100 guineas, and 50 guineas for the jasper George III. made for Sir Joseph Banks, and lent by him to the Master in the first instance. And, if the Master required another jasper George III. or two (which he did not), Pistrucci would not have demanded more than the former price; or, if the new ones were larger, 100 guineas at most: but even granting, for argument's sake, that the Master had indulged himself with three extra Georges, he must have had also an extra fit of generosity to give £1325 for them—that is, £1000 more than their price!

At first sight, it might have appeared possible that there was a misprint in the pamphlet, and that the one *thousand* was a typographical error; but no! in his second *printed* answer to Mr. Hamilton, Carlisle deliberately persisted in the—give it what name you please, gentle reader.

This, and other second-hand slanders contained in his pamphlet, produced a temperate letter of remonstrance from Mr. W. R. Hamilton, which was met with defiance; and Mr. Hamilton wrote a severe letter, the more cutting because it was logical and unanswerable, specifying about thirty misstatements. But the result was lamentable; Mr. Hamilton sent in his resignation of the office of Vice-President of the Society of Antiquaries, of which he had long been an ornament, stating, as a reason: "As I never can again consent to "sit at the same board with one who has so gratuitously gone "out of his way to circulate aspersions against an individual "whom I am proud to call one of my dearest friends, and "whose abilities as an artist are only equalled by his honesty "as a man."*

Thus "good-natured friends" managed to get up "a very pretty quarrel" between two gentlemen who had been on terms of friendly intimacy for above thirty years. Mr. Hamilton did not leave Mr. Carlisle a leg to stand upon; but he would not give in. What he stated in his last struggle about the affair of the Duke of York is not correct; neither Mr. Carlisle nor Lord Wallace, whom he dragged into the quarrel, knew the circumstances as Mr. Hamilton did.

* This was a good illustration of the exclamation of Job (xxxi. 35) "O that mine adversary had written a book!" for the scurrilous pamphlet led to Mr. Hamilton's gratifying published declaration of friendship, and eventually was the cause of Pistrucci's becoming a *selected* member of the Athenæum Club; a high testimonial to his character as an artist and an educated gentleman, equivalent to being elected F.R.S.

It is all over now; Pistrucci sleeps quietly in his English grave: "requiescat in pace."

> "Nor be the *requiescat* dumb,
> Lest it should fall on Wyon's tomb."

But no, they *sleep* not; they are, both of them, too good and diligent. On the contrary, freed from the embarrassment of the mortal coil, they can now estimate each other's worth, and enjoy each other's society, in the "*cœtum bonorum*"—the congregation of the just made perfect—and look down with complacency on the son of the one, and the daughter of the other, who are worthily following in their artistic footsteps.

Pistrucci was very proud of his Roman blood; what, then, would he have thought, had he lived, to find Mr. King (*opus cit.*), a man of all others capable of estimating his merits, place him in the list of *English** engravers, for no better reason than that he had been confined to the purgatory of working in the ungrateful Mint for thirty years, where his not being an Englishman afforded an excuse for persecuting him! And so far was this spirit of nationality carried, that when two of his daughters were awarded prizes at the Art Union, one was given to the elder, as she was English, having been born in the Mint; and withheld from the younger, because her birth took

* As also Nathaniel Marchant, who was thought to be, and was usually called, an Englishman. He was born in Germany in 1755; thence he went to Rome, and studied and worked there for sixteen years. From Rome, having made acquaintance with the English aristocratic connoisseurs, he migrated to London, where his career was brilliant and his works beautiful, as may be judged from the hundred impressions, with a descriptive catalogue, which he published of them. In his style, he successfully imitated the archaic Greek, especially coins, in its sublime simplicity, but with a little stiffness. (It has been a question whether his or Brown's copy of No. (26) is the best.) He died in 1812, A.R.A. of London.—NAGLER'S *Künstler Lexicon.*

place in Rome, a few weeks after her mother left London on a visit to it. Since that time, however, she has been awarded two prizes: one from the Italian Exhibition at Florence in 1861, for a group of Fauns similar to (145); and, in the London International Exhibition of 1862, the prize medal for the cameo gem of the Death of Adonis (139).

After the new coinage of George III. had been completed, the coronation of George IV. took place in 1821, the medal for which has been discussed at page 92; and then, as a fresh coinage was necessary for the new reign, Pistrucci was necessary too, and kept fully occupied for some time. As soon, however, as the necessity for his exertions slackened, the officials of the Mint renewed their agitation, and the Master was obliged to make a compromise: * *Pistrucci* was named *Chief Medallist*, and W. Wyon, the second engraver, was promoted to the office

* Doubtless the Moneyers cherished the tradition of what had before occurred. "As early as the year 1649, the Parliament having obtained "information respecting the improvements made in the manufacturing "of coins by the inventions and ingenuity of Blondeau, then residing in "Paris, they invited him over to this country, that our coinage might be "improved by his new process. Much jealousy was excited at the Mint by "this attempt to introduce a foreigner, and the Moneyers produced some "proof pieces by David Ramadge, one of their Company, to show that "foreign aid was not required. Though these pieces were very inferior, in "neatness of execution, to those of Blondeau, the opposition was successful, "and he left the kingdom.† . . . . After this successful resistance to the "introduction of improvement, coins continued to be struck by the "same inefficient process as before, till the year 1662." And yet, a few pages back, the writer of these lines advocates similar feelings and conduct (page 196, *vide supra*); but "In April, 1662, Blondeau, who had "been again sent for out of France, was taken into the Mint. He was "engaged 'to discover his secrets' in rounding pieces before they are "sized, and in marking the edges of the moneys with letters," &c. &c. (*Hawkins*, p. 213.) Thus, the *foreigner*, Roetier, of Antwerp, was then employed as Chief Engraver, to engrave the dies for the money to be struck by the improved machinery of the *foreigner* Blondeau.

† The Corporation were so virulent, that, though Blondeau was invited by and acting under the Government, they "exhibited against Blondeau "a charge of treason for coining in a private house."—*Ruding*, i. 415.

of *Chief Engraver*, with its emoluments and perquisites, which had been *withheld* from Pistrucci.

The salary of the second engraver having been £200, and that of Pistrucci £500, the Master, with the Treasury returns before his eyes, was obliged to divide the £700 between them —£350 to each; so that both Wyon and Pistrucci were unfairly mulcted; for Wyon, as Chief Engraver, was entitled to £500, and Pistrucci was engaged at £500 at first.

It may be thought strange that Pistrucci submitted to this treatment; but it would have been very inconvenient for him, hampered as he was with a family, and very much thrown out of his old connection of artistic business, to have left the Mint —where he had a house and a salary, though a reduced one. He also took pride in the Waterloo Medal, which he wished to produce to the public, but which he was determined not to finish whilst his position was equivocal and liable to the attacks of the Corporation;* and, in fact, he never did finish it until the Corporation was abolished, when, under the new order of things, he was recognised in the Red-book, in the new list of Officers of the Mint, as Chief Medallist; which, with his Roman friends, would rank even higher in art than that of Chief Engraver of Coin-dies. And a weighty reason for not throwing up his situation was, that he was proud of the appointment in the Royal Mint in London, which was equivalent to that of his rival Girometti in Rome; and if he had left the Mint, it might have been said or thought in Italy that he had (in their slang) made a "fiasco," that is a failure, or had broken down.

When the author first became acquainted with him, Pistrucci

* The Waterloo Medal was entirely unconnected with his *duties* in the Mint, being made according to *private contract*, as much as any of his gems, or as the George and Dragon which he made for Lord Maryborough before he was employed in the Mint.

was in great affliction; he had lately lost his two eldest children, who had but just grown up to maturity,—a boy and a girl,—both talented and handsome. On account of their protracted illness, he had been at great expense with them, which he could ill afford under the bargain made with him by Lord Maryborough, and the advance on account of the Waterloo Medal, which only anticipated his earnings; and with these disadvantages, he was even in a state of uncertainty whether he would be permitted to retain his post: besides which, he was deprived of the influential support and consolation of his constant friend Mr. Hamilton, who had just been appointed Ambassador to Naples. But Providence, which "tempers the wind to the shorn lamb," raised him up friendly assistance, and so enabled him to weather the storm for a few years, until the return of Mr. Hamilton, bringing with him fresh rays of sunshine.

After the coronation of George IV., and the arrangement by which Pistrucci became Chief Medallist, he divided his time between the Waterloo Medal and Gems, which he resumed according to the original compact. We may mention some of them here: a cameo of the Duke of York (181), on black and white onyx; a Medusa, in red jasper (40); and another, in sardonyx of three strata, the hair and serpents being cut in the brown upper stratum; a three-quarter front face of the infant child of a friend, in sardonyx (34); a Leda and Swan, on an onyx. Besides these, he executed a large gem for Lord Lauderdale, a St. Andrew and Cross, the badge of the Scotch Order of St. Andrew, on Oriental sardonyx. The workmanship was remarkably fine, including the motto, NEMO ME IMPUNE LACESSIT, in large Roman letters round the table, cut in relief,—the difficulty of which can scarcely be estimated except by an engraver. At a later period, he engraved two portraits of her Majesty, one as Princess Vic-

toria, the other as Queen, with a diadem; cameos, both on the same stone—an onyx which had three layers, two white with a dark one in the middle—so that there was a portrait on each side. He also engraved a beautiful comic mask in the antique style, on fine bluish-white chalcedony, of the best Oriental quality; the Young Bacchus (125); and many other gems, including portraits,—all of which, if not made to order, were greedily purchased even before they were finished.

Subsequently, he executed many medals; amongst others, the Coronation Medal* of Queen Victoria, for the Mint. He had made a large gold medal of George IV., with a trident on the reverse, emblematic of the maritime power, with two dolphins (to fill up the lower part), whose graceful shapes were favourite devices of the Greeks and Sicilians.

Later, he also engraved another very large medal of George IV.—a speculation of Messrs. Rundell and Bridge, the Court jewellers; but, as it was not successful with the public, the medals were most of them melted, not sold. For Hamlet he executed a large medal of the Duke of York, whose popularity as commander-in-chief obtained for it a considerable demand; and also a miniature one, not more than a quarter of an inch in diameter, which was in great request amongst the friends of his Royal Highness, and was worn in rings, &c. (136). He thus made the largest medal (the Waterloo) and the smallest (that of the Duke of York) ever executed. He also made a medal for the Royal Humane Society; one of Lord Maryborough; and one of the Duke of Wellington (153), having a helmet on the reverse (134), covered with allegorical figures, —a rival of the celebrated antique gem, bearing a helmet,

* Pistrucci did not engrave the coronation medal of William IV., because he refused to copy Chantry's bust, and his Majesty would not sit for his portrait, but Queen Victoria sat for hers, see (158).

with Bellerophon on Pegasus, spearing the Chimæra, which is a gem in jasper chalcedony onyx, sometimes misstated to be sardonyx,—unaccountably, as there is not a particle of sard in it.

About this period, he devoted some of his time to marble sculpture. There are many marble busts of friends of his in London (187), besides a colossal bust of Pozzo di Borgo, four times as large as life; and a bust of the Duke of Wellington, which is now in the United Service Museum. It was in going through the City to sit for this bust, that the hero of Waterloo was mobbed by the citizens, who chose to take umbrage at some of his political movements, forgetting how much they owed to him for his straightforward political conduct in the administration of the government.

> "Thou many-headed monster thing!
> Oh, who would wish to be a king!"—

or even a commander-in-chief.

Under the accumulated difficulties and annoyances in the Mint, Pistrucci took a most decided step, in order to be more at liberty to "carry on the war." Dotingly fond as he was of his children, he resolved to part with them, and sent his wife, and five out of the six survivors, back to Rome, where they could be supported and educated more economically, and where they would be comfortable amongst relations and friends, whilst he would be more at liberty to work for them, and remit the necessary funds.

He retained with him only his eldest son, Camillo, not so much for companionship, as to conduct his education. His natural hereditary bent was sculpture, and he soon acquired the power of drawing and modelling perfectly; so that when he was about eighteen, his father parted with him, and sent him to Rome, with a letter of introduction, not to his old

enemy Canova, but to Thorwaldsen, who, with the greatest kindness, received him into his studio, and gave him every facility for instruction and practice. The result was this,—in a few years he became such a proficient, that he was appointed to the highest glyptic office under the Pope's Government; that is, to superintend and direct the arrangement and restorations of all the antique statues which were constantly being discovered and disinterred,—many of the most difficult restorations being executed by his own hand.

He was a fine, spirited fellow, and fought and was wounded as a volunteer under Garibaldi during the siege and storming of Rome. But, after a most honourable and gratifying career, he died of fever, at a comparatively early age.

After some years, when the changes in the Mint took place, by which Pistrucci was firmly seated in his post, though he was still unfairly treated, he made up his mind to revisit his family and his old friends in Rome, where, of course, he was received with rapture, and fêted as an honour to the Italian school.

After a short sojourn, he arranged to bring back with him his two younger daughters, Elena and Maria Elisa, who showed a decided and great disposition for the arts; his wife, who was becoming rather infirm, preferred remaining with her elder daughter, Catherine, who was married, and with her grandchildren,—and she had also her two remaining sons living near her as additional ties.

Pistrucci, with his two daughters, remained for some years in the Mint, where the latter soon acquired great facility and skill in gem-engraving, under the advantages of such a teacher as their father; and besides the prizes mentioned at page 203, they got surprising prices for their works, considering their ages and their short career.

However, as Pistrucci had now no actual duties to per-

form in the Mint, and was not likely to have, unless there should be a new Coronation Medal, or something extra, to be executed, they took a cottage at Old Windsor, partly for their health, partly in order to be able, in peace and quiet, to work at gems, and finish the Waterloo Medal. Here they lived a tranquil and prosperous life for some years, enjoying the society of several families in the neighbourhood, and of Mr. Hamilton and several old friends who used to visit them from London.

The Waterloo Medal was finished in the year 1849, and 1500*l.*, the balance of the price remaining, paid for the engraving; but the dies were never hardened, and are never likely to be, as few men but Pistrucci could overcome the difficulties to be encountered. Each die, or rather matrix, is in two concentric separate pieces—the outer forming a ring round the interior one. Even supposing (which is not likely) that two or more of these parts did not warp or crack and break in the hardening, it would have taken another seven years to get up punches from these matrices, and to retouch the whole of the subjects on the punches, and afterwards in the dies.

But the question of finishing the striking was never agitated: *tempora mutantur;* and there was a great difference between striking a medal which would have flattered the Holy Alliance of 1815, and the putting forth one which might disgust our faithful ally of 1850, independently of the reasons mentioned in the quotation from the *Illustrated London News* at p. 100.

As might be expected from increased skill and experience, some of Pistrucci's finest works were executed at Old Windsor: the Young Bacchus—carnelian onyx, three strata (125); a Medusa—sardonyx, three strata, more elaborate than that in jasper (40); the Mask in bluish-white Oriental chalcedony—a superb stone, and a beautiful gem; and also some portraits

in cameo. It is remarkable that his sight remained perfect when he was seventy years of age, so that he could work without spectacles, although, when little more than twenty, he was for some time threatened with blindness (*gutta serena*), produced by inflammation and fatigue of the eyes, as mentioned at page 149.

The evening of his days was tranquil and happy; he died of inflammation of the lungs, on the 16th September, 1855, at the age of seventy-one, respected and mourned by many friends.

His daughters returned to Rome, where they are continually increasing in celebrity as gem-engravers.

LIST OF ILLUSTRATIONS.

No.		Page
1.	Elgin Metope	3
2.	Elgin Frieze	3
3.	Basso Relievo: Sarcophagus	3
4.	Marble Vase	3
5.	Portland Vase (Barberini)	50
6.	Cameo from Bronsted Bronze	3
7.	Bas Relief: Cupid and Psyche (Thorwaldsen)	105
8.	Intaglio: Forge of Vulcan	3
9.	Bas Relief, by Flaxman: Mercury and Pandora	3
10.	Intaglio: Laocoon	3
11.	Intaglio: Hector and Andromache	105
12.	Agate Seal, from Nineveh	6
13.	Impression of ditto	6
14.	Cameo: Laocoon	3
15.	Cameo: Hector and Andromache	105
16.	Intaglio: Mercury and a Titan	120
17.	Intaglio: Saturn and Neïth	120
18.	Cylinder, with intaglios, from Nineveh	5
19.	Ditto ditto ditto	6
20.	Egyptian Scarabeus	5, 6
21.	Egyptian intaglio	6
22.	Ditto ditto	5
23.	Assyrian Scarabeus intaglio	5
24.	Impression from a cylinder	3
25.	A coin of Syracuse: Proserpine and Dolphins	8
26.	A Greek coin: Alexander the Great	8
27.	Coin of Thurium: Bull	
28.	Coin of Agrigentum: Eagle and Hare	
29.	Intaglio: Mercury	10
30.	Intaglio: Theseus and Centaur	10

No.		Page
31.	Cameo: Satan shell	10
32.	An onyx	11
33.	Cameo: Cupid	10
34.	Cameo: Portrait of an Infant, now Mrs. George Long	10
35.	Cameo: Psyche	10
36.	Cameo: Æsculapius	11
37.	Cameo: Omphale (shell), after SCHWANTHALER	10
38.	Geode (wood-cut)	49
39.	Cameo: Mask	11
40.	Cameo: Medusa	127
41.	Intaglio: Banded onyx	16
42.	Cameo: Norma	123
43.	Cameo: Minerva of Aspasius (SAULINI)	79
44.	Cameo: a Sacrifice, by AMASTINI	11
45.	Intaglio: Apollo Umpire	12
46.	Cameo: an Egyptian Antelope	12
47.	Cameo: Ceres, by PANINI	11
48.	Cameo: Œdipus and Sphinx	108
49.	Cameo: Egyptian Deity	12
50.	Cameo: Diana	37
51.	Cameo: Cupid	37
52.	A Nicolo	14
53.	Intaglio in Nicolo	14
54.	Ditto ditto of yellow sardonyx	15
	Cameo Antique, recut by PISTRUCCI (wood-cut)	84
58–76.	Tools (wood-cut)	18
78.	Intaglio: Michael Angelo's Seal	106
79.	Intaglio: Diomede of Dioscorides	9, 25
80.	Onyx of three strata	15
81.	Cameo: Jupiter Serapis	15
82.	Miniature Bust of the Emperor Claudius	15
83.	Intaglio: Egyptian Griffin	108
84.	Intaglio: Julius Cæsar of Dioscorides	25
85.	Intaglio: Io of Dioscorides	25
86.	Intaglio: Cromwell	27
87.	Intaglio: Seal of Mary Queen of Scots	27
88.	Derbyshire Fluor-spar, of three colours	28
89.	Crystal of Sapphire	31, 36
90.	Crystal of Ruby	37
91.	Crystal of Diamond	32
92.	Intaglio in Crystal: the Dog-star, Sirius	44

No.		Page
93.	Egyptian intaglio: Lions	20
94.	Geode	48
95.	Geode	53
96.	Cameo, curved	50
97.	Side view of same	50
98.	Onyx, with concentric layers	50
99.	Stalactite onyx, with concentric layers	50
100.	Stained striped onyx	58
101.	A sardonyx Bead	60
102.	Commencement of an intaglio	18
103.	Commencement of a cameo	19
104.	Cameo in sardonyx: Triumph of Augustus	51
105.	Cameo in agate: Apotheosis of Augustus ("Agate of Tiberius")	52
106.	Fortification agate	53
107.	Geode containing water	54
108.	Shell cameo: Cupid Triumphant	73
109.	Ditto Cupid Vanquished	73
110.	Cameo in sardonyx: Portrait of a Parsee	10
111.	Ditto Portrait of Pistrucci	76
112.	Intaglio in carnelian: Portrait of Canova	76
113.	A piece of striped onyx	70
114.	The same when stained	
115.	Wax-model Portrait of Napoleon I.	173
116.	Cast of a wax-model Portrait (126) in white enamel	129
117.	Intaglio in sard: a forged antique	81
118.	Ditto ditto	81
119.	Intaglio: Cybele	81
120.	Union of Nos. 117 and 118	81
121.	Payne-Knight's Flora, by Pistrucci	86
122.	Side-view of ditto. P. Explanatory of ditto	182
123.	Intaglio fragment: Apollo	83
124.	Cameo in sardonyx: Force subjected by Love and Beauty	116
125.	Cameo in carnelian-onyx: Young Bacchus	116
126.	Wax-model Portrait on Slate	76
127.	Cast from a cameo, by Lebas	127
127a.	Cameo in sardonyx: the Strozzi Augustus	99
128.	Coin: George IV. (Double Sovereign) by Merlen	92
129.	Reverse of Double Sovereign, by Pistrucci	92
130.	Coronation Medal: George IV.	92
131.	Reverse of ditto	93
132.	First proof of No. 131	93

No.		Page
133.	Medal: Cardinal Gonsalvi, by Girometti	76
134.	Reverse of No. 135	100
135.	Medal: Duke of Wellington	100
136.	Miniature medal: Duke of York	207
138.	Medal: Pope Pius IX., by Cerbara	76
139.	Cameo in sardonyx: Death of Adonis	131
140.	Inscription, stained in sard	113
141.	Ditto ditto	114
142.	Intaglio: a Satyr and Nymph (antique)	107, 122, 127
143.	Waterloo medal: Obverse (the Prince Regent, Emperor of Austria, Emperor of Russia, and King of Prussia)	195
144.	Waterloo medal: Reverse	100
145.	Wax model: Fauns	103
146.	Cameo in chalcedonyx: Minerva	116
147.	Intaglio: Aristides	121
148.	Intaglio: Ariadne	122
149.	Intaglio: Dancing Figure	122
150.	Intaglio: Greco-Italian antique	122
151.	Ditto ditto	122
152.	Cameo in carnelian-onyx: a Fragment	185
153.	Intaglio: Hector and Andromache, after Thorwaldsen	105
154.	Cameo in jasper-onyx: a Portrait	76
155.	Shell cameo: Sappho	73
158.	Medal: Queen Victoria, by Pistrucci	200
159.	From a marble Bust of Prince Albert, design for a cameo, by Theed	25
160.	Cameo in onyx: Napoleon III., by Lebas	123
161.	Coin (Three-shilling piece): George III., by T. Wyon	190
162.	Coin (Crown-piece): George III., by Pistrucci	191
163.	Coin (Half-crown): George III., by T. Wyon	192
164.	Wax model: Portrait of George III., by Marchant	192
165.	Cameo in onyx: Perseus	123
165a.	Cameo in sardonyx: Omphale	123
165b.	Intaglio in torquoise: a Turkish Signet-ring	22
166.	Landscape: Oberstein	55
167.	Bronze figure: a Sun-dial	130
168.	Cameo in carnelian-onyx: Queen Victoria	76
169.	Intaglio in sardonyx: Prince Albert	25
170.	Cameo in sardonyx: Chloe	92
171.	Cameo in onyx: Achilles	123
172.	Medal, by W. Wyon	198
174.	Appearance of Fish in chalcedony	115

No,		Page
175.	Intaglio: Medusa (antique)	126
177.	Cameo in chalcedonyx: Judith	123
178.	Intaglio: Medusa	126
179.	A Lusus Naturæ (chalcedony): Resemblance of Caterpillars	115
180.	Intaglio in agate: Medusa (antique)	126
181.	Cameo in onyx: Portrait of Duke of York, by Pistrucci	206
182.	Wax model: Portrait by Pistrucci	
183.	Cup	50
184.	Ditto	50
185.	Portrait by Isler: cameo sardonyx	
186.	Ditto ditto the Authoress of 167	131
187.	Bust of the Author by Pistrucci (1845), life-size	208
188.	Cast of the sardonyx cameo by Pistrucci in the Vienna Imperial Cabinet	92

INDEX.

	PAGE	FIGURE
Achilles; cameo, chalcedonyx, by Isler; exhibited 1867, in Paris, by Phillips	123	171
Adamant	31	89, 90
Adonis, death of; cameo, Oriental sardonyx, by Maria Elisa Pistrucci	132	139
Æsculapius; cameo, chalcedonyx, by M. Elisa Pistrucci	11	36
Agate, fortification	53	106
„ resemblance of caterpillars	115	179
„ "of Tiberius;" a cameo	52	105
Albert, Prince Consort; striped (fasciata) sardonyx intaglio, by Wilson	25	169
„ „ design for a cameo from bust, by Theed	25	159
Alexander the Great; Greek coin	8	26
Almandine garnet	41	
Amastini; cameo, sardonyx; a sacrifice	11	44
Amazon stone	40	
Amethyst	44	
Anacreon; Ε'ΙΣ 'ΡΟΔΟΝ	90	
Angel sun-dial, in bronze, by an Amateur	131	167
Antiques, forged	16, 21, 81 / 83, 108	83, 117, 118
„ real	107, 122	142, 150, 151
„ fragments	83	123
„ intaglios	3	
„ „ archaic	9	12, 150
„ „ Assyrian	5	23
„ Roman; Diomede, by Dioscorides	9, 25	79
„ Egyptian	6	21
„ „ lions	20	93
„ Etruscan	5, 9	150
„ cylinder	5	24
„ Greco-Italian group	122	151
„ „ Warrior	122	150
„ „ Satyr and Nymph	122, 107	142

	PAGE	FIGURE
Antiques, Roman, cinquecento ?, Io, Dioscorides	25	85
,, ,, Julius Cæsar, Dioscorides	25	84
,, Nineveh seal	6	13
,, nicolo	14	53
,, ,, yellow sardonyx	15	54
Apollo, fragment (British Museum), intaglio	83	123
Aquamarine (beryl)	39	
Archaic	9	150, 151
Archæomania	125	
Ariadne del Campidoglio; intaglio	122	148
Aristides, intaglio, from a marble statue	121	147
Art, periods of	7–15	
Augustus, Strozzi (Blacas); cameo	99	127 A
Bacchus, youthful; cameo, carnelian sardonyx	116	125
Bas-relief	3, 78	1, 2, 3
Beads, Oriental onyx	60	101
Beetles (scarabei)	5	20
Bloodstone (heliotrope)	40	
,, onyx, cameo	123	42
Bonelli, dealer in "antiques"	83, 158, 171, 179, 183, 184	
Bordt, impure diamond used for cutting	32	
Brazilian chalcedony	56	
Bronze, and iron and steel	94, 95	
,, of Liris (British Museum), copied in cameo	3	6
,, figure, by an amateur	130	167
Bronzes	3, 131	6, 167
Bulla, onyx	15	80
Bull, on coin of Thurium	8	27
Bust, miniature, Emperor Claudius, white carnelian	16	82
,, of the Author, by Pistrucci	208	187
Cabochon, en	23, 41	83
Cairngorm, yellow rock crystal	44	
Cameo	3, 10	6, 14, 15
,, in progress	19	103
,, portraits	10, 75, 76	34, 110, 111, 154, 168, 185, 186
,, with curved layers	50	96, 97
,, with two different subjects, like the Transfiguration by Raphael	52	105
,, of three strata	11	42, 43, 44, 48
,, engravers now living	123, *et passim*	
,, on stone of one colour	11	40, 50, 51
,, on sards	12	45, 49
,, on shell	73	31, 37, 108, 109

	PAGE	FIGURE
Cameo, on various stones	10, 11	
„ Force subject to Beauty and Love	116	124
„ archaic	23	48
„ artificial	129	126
„ antique (Russian Imperial cabinet), recut by Pistrucci	84	woodcut
„ apotheosis of Augustus; agate of Tiberius	52	105
„ Triumph of Augustus; sardonyx	52	104
„ Egyptian front-face; shaded sard	12	49
„ „ antelope; sardonyx	11	46
„ mask; white chalcedony	11	39
„ Œdipus consulting the Sphynx; sardonyx	11, 108	48
„ Jupiter Serapis	15	81
„ Apollo umpire; sard	12	45
„ in the Vienna Imperial Cabinet, by Pistrucci, a cast	92	188
Canova's portrait; intaglio	76	112
Carbonate diamond	26, 36	
Carbuncle—garnet	41	
Carnelian and sard	59, 66	
Caterpillars, *apparently* petrified in agate	115	179
Cat's-eye	42	
Cellini, Benvenuto	4	
Ceres; cameo, after a Sicilian coin, carnelian sardonyx, by Pannini	11	47
Chalcedony	46	
„ Brazilian	56	
„ colours of	57	
„ alterations by heat, &c.	70	113, 114
„ stained by the ancients	61	
„ methods of staining	57–70	
„ stalactite and stalagmite	50, 51	95, 99
„ containing water	53, 54	107
Chloe; cameo, red sardonyx	92	170
Chrysoberyl	39	
Chrysolite	39	
Chrysoprase	40	
Cinquecento	15	
Coins and medals	4	
„ antique; Greek, Sicilian, Italian	8	25, 26, 27, 28
„ dies for ancient	94	
„ „ modern	93	
„ George III., by Marchant	190	164
„ „ by T. Wyon	192	161, 163
„ „ by Pistrucci	190	162
„ George IV., by Pistrucci	92	130, 131
„ „ by Merlen	92	128
Collections of gems and collectors	121–128	
Concealed legends stained in sard	113	140, 141

	PAGE	FIGURE
Corundum jewels	31, 32, 36	89, 90
Cromwell; intaglio by Wilson	25	86
Crystal, rock	47, 48	
„ „ containing a drop of water	54	
„ „ intaglios in	44	92
„ in geodes, &c.	48	94, 95
Cupid; cameo, sapphire	37	51
„ returning from the chase; cameo, by Neri	10	33
„ triumphant; shell cameo, by Diez	73	108
„ vanquished; shell, copy of a well-known gem, by A. B.	73	109
„ restoring Psyche to life, by Thorwaldsen	3, 105	7
„ Tasso's description of	105	
Cybele, from the antique	81	119
Cylinders	5, 6, 7	18, 19, 24
Dancing Figure, Pompeii; intaglio	122	149
Derbyshire (fluor) spar, three colours	28	88
Diamond	25, 32, 45	91
„ brilliants	35	
„ crystal of	32	91
„ cutting and polishing	35, 36	72
„ engraved in intaglio	27	87
„ Koh-i-noor	33, 34	woodcut
„ points for engraving with	21	73, 74
Diana; cameo in ruby, by Pistrucci	37	50
Dies for coins and medals	93	
„ „ ancient	94, 95	
„ „ matrix	94	
„ „ punch	94	
„ „ hardening of	94, 200	
Diomede; intaglio by Dioscorides	10, 25	79
Dioscorides, gems by; Io, Julius Cæsar, Diomede	25	79, 84, 85
Dolphin on ancient coin	8	25
Drilling tools	20	75, 76
Duke of York; cameo, black and white onyx, by Pistrucci	206	181
„ „ miniature medal	207	136
Eagle and Hare, on ancient coin	8	28
Egyptian front-face; cameo, sard, two shades	12	49
„ intaglio; lions	20	93
Emerald	38	
Engravers, modern	9	
„ still living	123	
„ education of	75	
Engraving lathe (ordegno) and tools	18	55–77
„ by diamond-points	20, 21	73, 74
„ by corundum	20	
Etruscan gems	9, 23	150, 151

	PAGE	FIGURE
FASCIATA	16	41
Fauns sporting; intaglio, nicolo	14	53
Fauns, wax model, by Pistrucci	103	145
Files, ancient	97	
Fish, stained in sard	115	174
Flaxman, modelling by	76	
„ Mercury conducting Pandora to Earth	3	9
Flint, silex, or silica	44	
Flora of Payne-Knight (British Museum); cameo, by Pistrucci; "breccia di carniola," sardonyx	86, 182	121, 122
„ a second one (now in possession of one of Mr. Hamilton's family), by Pistrucci; sardonyx	185	152
Forged antiques	16, 80, 81, 108, 118	83, 117, 118
Fortification agate	53	106
Fragments of gems	81, 83	117, 118, 123
Frieze, Elgin Marbles (British Museum), bas-relief	3	2
GARNET	41	
Gems	1, 3, 4	
„ intaglio	4	
„ cameo	10	
„ names on, forged	118	
Geode (*woodcut*)	49, 53	94, 95
„ containing water	54	107
George and Dragon, reverse of double sovereign	92, 196	129
George III.	190, 192	161, 162, 164
George IV.	92	130
Girometti	97	15
Granite and other large flint-rocks, how shaped and sculptured	72	
"Greco-Italian" gems	9, 16, 122	150, 151
Greek, archaic	4, 9	
Greeks	2, 8, 90, 98 *et passim*	
Griffin, Egyptian; intaglio	108	83
HAMILTON, Right Hon. Richard William	182, 202, 206	
Hæmatite, black, iron-ore	6, 40, 62	22
Hector and Andromache; intaglio, by Pichler	105	11
„ „ cameo, by Girometti	3	15
„ „ intaglio, after Thorwaldsen's bas-relief	105	153
Heliotrope—bloodstone	40	
Horace on antique works	99	
IDAR, see Oberstein	55	
Intaglio	3, 10	11, 29, 79, &c.
„ corded border	9	151
„ on banded (fasciata) onyx	14	41
„ process of engraving	18	102

	PAGE	FIGURE
Io of Dioscorides; intaglio	25	85
Iron and bronze	95	
Iron crown of Italy	96	
Isler, Luigi, 5, Oval Road, London, cameos by	123	110, 165, 165A, 170, 171, 177
„ „ „ portraits by		110, 185, 186
Jacynth	42	
Jade	39	
Jasper	40	40
Jewels	25 *et seq.*	
„ colours of	37	
Judith; cameo, chalcedonyx	123	177
Julius Cæsar; intaglio, sard, by Dioscorides	25	84
Καινομανία, admiration of modern works as much as of ancient, *contra αρχαιομανία*	124	
King, Rev. C. W., M.A.	117	
Koh-i-noor diamond	34	woodcut
Lady amateurs and artists	130	
Laocoon, intaglio from antique	3	10
„ cameo	10	14
Lapis-lazuli	43	
Lathe, engraving (ordegno), and tools	18–25	58–76
Lebas, cameo portrait, and cast from gem	123	160, 127
Lough's Satan, shell-cameo from	10	31
Loadstone and black hæmatite	6, 40, 62	19, 22
Marchant, Nathaniel	97, 190, 203	164
Mask, antique; white chalcedony	11	39
Maskelyne, N. S., F.R.S.	110	
Medal, George IV., Coronation, by Pistrucci	92	130, 131
„ her Majesty Queen Victoria, by Pistrucci	200	158
„ Duke of Wellington, by Pistrucci	100	134, 135
„ Waterloo, by Pistrucci	100, 195, 205, 210	143, 144
„ Pius IX., by Cerbara	76	138
„ Cardinal Gonsalvi, by Girometti	76	133
„ Lloyd's Humane, by W. Wyon	196, 198	172
„ Duke of York, miniature, by Pistrucci	207	136
Medusa; cameo, jasper, by Pistrucci	127	40
„ ugly	125	175, 178
„ handsome	126	40, 180
Mercury; intaglio, from statue by Giovanni di Bologna	10	29
„ overcoming a Titan; intaglio (Poniatowsky)	120	16
„ conveying Pandora to Earth, by Flaxman	3	9
Metope, Elgin (British Museum)	3	1
Minerva; cameo, pale Oriental chalcedonyx, by Pistrucci	116	146

	PAGE	FIGURE
Minerva of Aspasius; jasper onyx, by Pannini	79	43
Mint, Royal, and Moneyers	193, 204	
Mocha stones	41, 115	
Models in wax	76	
,, ,, a Lady, by Pistrucci		182
,, ,, by the Author	76	126
,, Napoleon I., by Pistrucci, in the Hundred Days	173	115
,, Fauns	103	145
Moulds of cameos, &c.	79	
Moonstone	42	
Murrhine, fluor-spar (?)	28	88
Napoleon I.; wax-model portrait, by Pistrucci	75, 173	115
Napoleon III.; cameo portrait, by P. Lebas, Paris	123	160
Natter, Johann Laurenz	82, 193	
Neri, Cupid, cameo, by	123	33
Newton, C. T.	109	
Nicolo; onyx	14	52
,, intaglio, antique	14	53
,, golden-yellow intaglio (British Museum)	15	54
Nineveh seal	6	12, 13
Norma; cameo, bloodstone onyx, by Brett	11, 123	42
Nymph and Satyr; antique intaglio, sard	107, 122, 127	142
Oberstein, view of	55	166
Œdipus and Sphynx; antique cameo, three-strata sardonyx	11, 108	48
Omphale; cameo, sardonyx	123	165 A
,, shell cameo, after Schwanthaler	10	37
Onyx	10	32
,, bloodstone	11	42
,, chalcedonyx	11	36
,, carnelian	11	47
,, natural gray	10	35
,, banded (fasciata) intaglio	14, 16	41
,, ,, sardonyx	25	169
,, nicolo	14	52, 53, 54
,, large	51	
,, concentric stalactite	51	99
,, ,, stained black on one side, red on the other	113	98
,, cup	50	
,, striped, changed by heat	70	113
,, Oriental beads	60, 62	101
,, ,, bulla, of three strata	15	80
,, ,, ,, engraved as cameo	15	81
,, fortification agate	53	106
,, with curved strata	50	97
Opal	42	

	PAGE	FIGURE
Pannini; carnelian onyx, cameo; Ceres, by	11	47
Paste, imitation cameos of	129	116, 126
,, ,, intaglios of	129, 130	92
,, how to cast	130	
,, cast from wax model	129	116, 126
Patina	148, 186	
Perseus; cameo, onyx	123	165
Pichler, Giovanni	9, 21, 105	
Pietra dura	4	
Pingo, Lewis	193	
Pistrucci, Benedetto, a Roman, portrait of	76, 203	111
,, ,, marble sculpture by	208	
,, ,, cameos by	3, 10, 92, 127, 173, 86, 106, 116, 103, 116, 126	6, 34, 40, 115, 121, 124, 125, 145, 146, 152, 181, 188
,, ,, medals and coins (intaglio) by	99	130, &c. 143, 158, &c.
,, ,, busts by	92	187
Pistrucci, Elena, cameos by	76, 130	154
,, Maria Elisa, cameos by	11, 76, 132	36, 111 139, 168
,, Camillo	208	
,, Elena and Elisa	209	
Pius IX., by Cerbara	144	138
Plasma	41	
Poniatowsky gems	118, &c.	16, 17
Prime d'Emeraude		
Proserpine; antique coin	8	25
Psyche revived by Cupid, by Thorwaldsen	3, 105	7
,, contemplating the fatal Vase	10	35
Quartz	47	
Queen Victoria: her Majesty's portrait; cameo, sard-onyx, by Elisa Pistrucci	76	168
,, ,, medal, by Pistrucci	200	158
,, Mary of Scotland; coat-of-arms, on a diamond	27	87
Rock-crystal, an intaglio of, copied in glass paste	44	92
,, containing a drop of water	54	
,, quartz	48	
Root of emerald	39	
Ruby, cameo in	37	50
,, star-stones	37	
Sapphire, cameo in	37	51
,, crystal of	51	89, 90

	PAGE	FIGURE
Sapphire, white (adamant)	31	89, 90
,, star-stone	37	
Sappho disconsolate; shell cameo, from Theed's marble	73	155
Sarcophagus, marble (British Museum)	3	3
Sard	66	
,, with concealed letters	113	140, 141
,, of two shades, cameo	12	45, 49
Sardonyx	66	41
Satan, from Lough's collossal marble shell cameo	10	31
Saturn and Neïth; Poniatowsky intaglio	120	17
Satyr and Nymph; antique intaglio, sard	107, 127	142
Saulini; jasper-onyx cameo, Minerva of Aspasius	11	43
Scarabeus, Egyptian	5	20
,, Assyrian	5	23
Schwanthaler; cameo, from his Omphale marble, life-size	10	37
Sculpture, miniature (gems)	4	
Seal with arms of Mary Queen of Scots on a diamond	27	87
,, rings	7	
Seals; intaglios	5, 6, 7, 27	87
,, how cut	6, 18, 21	102
,, from Nineveh	6	12, 13
,, Turkish inscription, "Ma sh'allah!" usually written by travellers "Mash Allah!" ("What God will!")	22	165 B
,, of Michael Angelo	106	78
Serapis; cameo cut from onyx of a bulla	15	81
Shell cameos	73	31, 37, 108, 109, 155
Silex, or silica	44	
Sirletti, engraver	21	
Sirius, the dog-star; paste, from cinquecento intaglio	130	92
Staining sards, onyxes, chalcedonies, &c.	57–70	113, 114
,, gradations of	58, 60	100, 101
,, black on one side, red on the other	113	98
,, concealed letters, Mocha, &c.	113, 114	140, 141
,, appearance of fish in chalcedony (sard)	115	174
Star-sapphire and ruby	37	
Steel	95	
Sun-dial, bronze figure	131	167
Stosch, Baron	82	
THEED; shell cameo, from his Sappho	73	155
,, intaglio, from his Prince Albert sardonyx	25	169
Theseus and Centaur; intaglio, after Canova's group	10	30
Thorwaldsen; Cupid and Pysche	3, 105	7
Topaz	38	
Turkish ring; turquoise	22	165 B
Turquoise	43	

	PAGE	FIGURE
VASE, marble (British Museum)	3	4
,, Portland (Barberini)	3	5
,, from geodes	50	
,, from stalactites	50	
,, of St. Denis	50	
,, Tazza, Farnese	51	
,, *one of perfectly concentric onyx layers, Isler	50	183, 184
Vaux, W. S. S., F.R.S.	124	
Vulcan, forge of; Roman intaglio, after Canova	3	8
WATERLOO MEDAL	100, 193, 210	143, 144
Wax-modelling	75	
,, trial, for intaglio engraving	19	
Wedgwood	76	
Wyon, William	198	

---

* A cup formed out of a cylindrical onyx, a unique mineralogical specimen, which, when shaped at Oberstein, was consigned to Isler to be engraved. He selected the subject of Bacchus as appropriate for a goblet. It is worked in cameo, as a frieze round the margin.

One side represents Mercury contemplating the group of Silenus and the nymphs, with the infant which he has just delivered to them from Jupiter, towards whom Silenus looks up in adoration and gratitude. On one side a nymph is leading in a goat to nourish the child, as Jupiter himself was said to have been nursed. On the right one of the Corybantes (old friends of Jupiter) is blowing a horn to prevent jealous Juno from hearing the baby cry.

The other side represents Bacchus adult in his progress through India, his chariot drawn by tigers, with other accessories of satyrs and nymphs with musical instruments and attendant youths.

The gem is not yet finished, but the autotype sufficiently shows the design.

THE END.

VIRTUE AND CO., PRINTERS, CITY ROAD, LONDON.

1

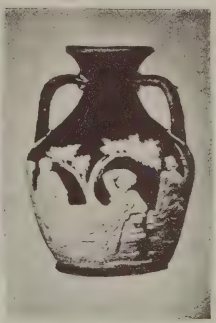
3

2

7

4

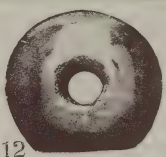
6



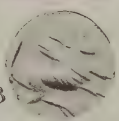
5

10

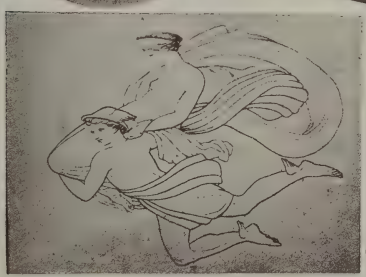
11



12



13



9.

8

22

14

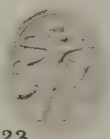
20

16

17

21

15



23

18

24

19

25

26

28

27

40

29

37

36

31

41

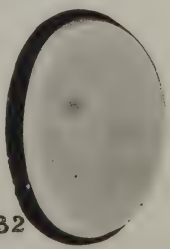
39

35

34

33

30


32

42

49

43

50

44

51

53

54

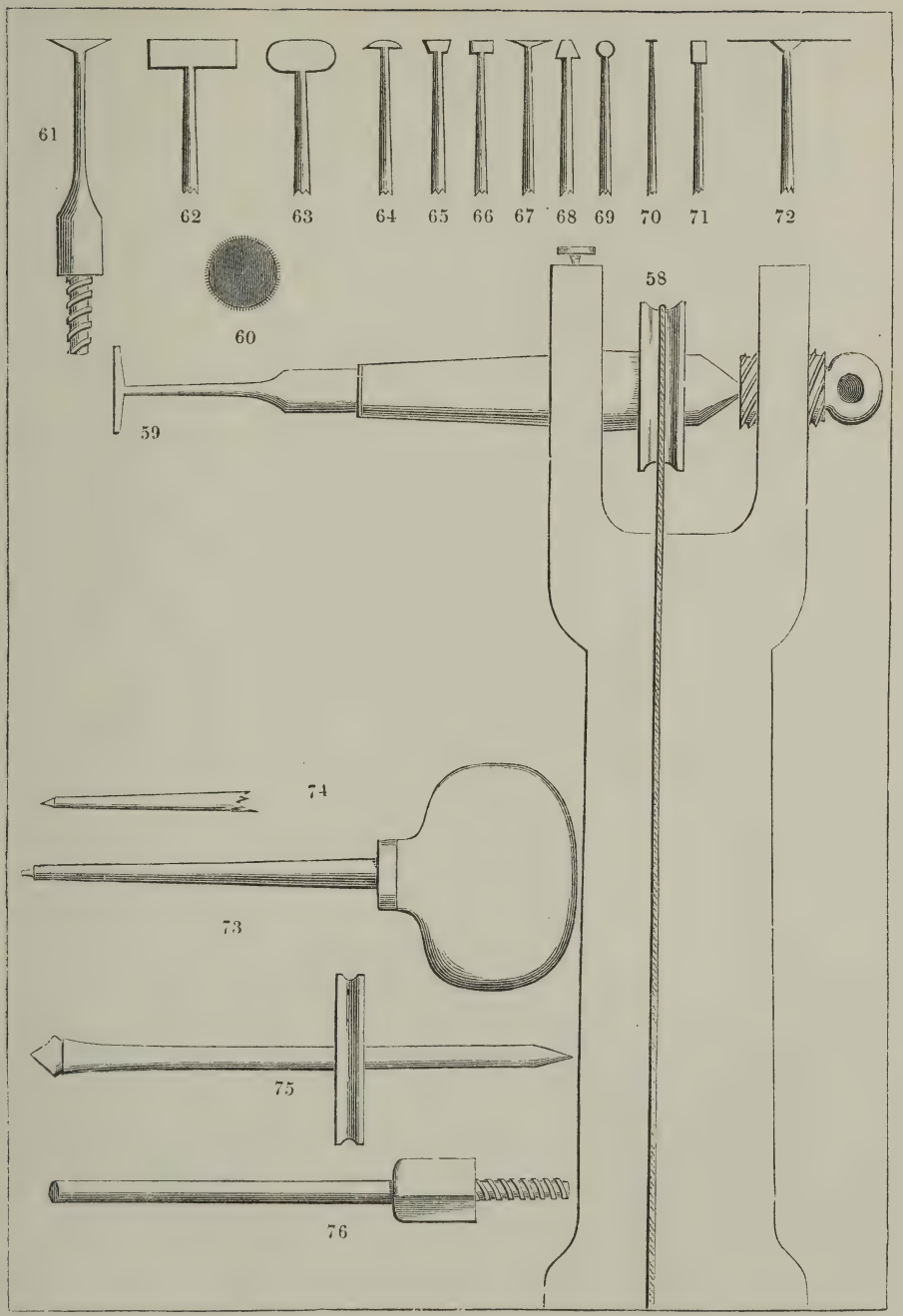
48

47

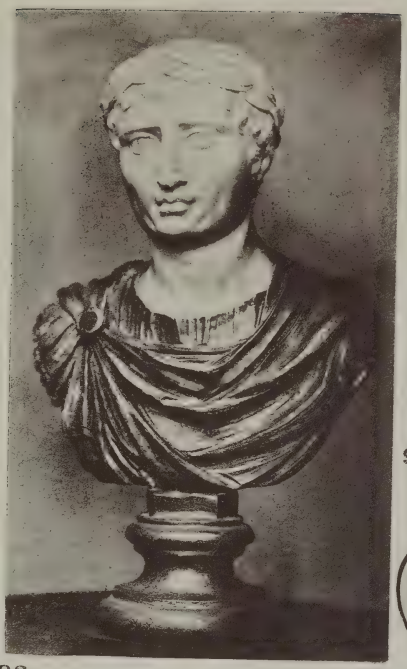
46

52

45


61
62
63
64
65
66
67
68
69
70
71
72
60
58
59
74
73
75
76

87

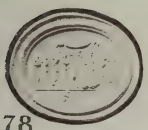


82

86

84

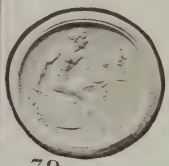
85



78

92

83

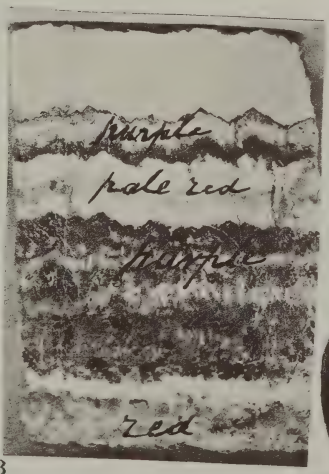


79

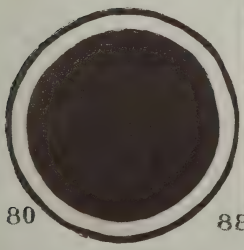
90

89

91



88



80

81

94

96

100

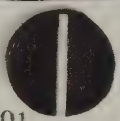
95

93

97

103

102



101

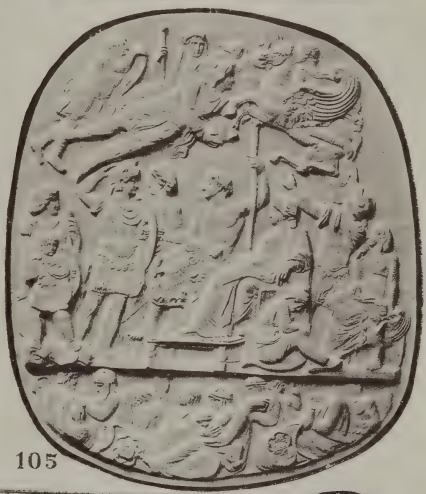
99

98

106

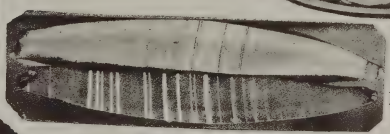
104

107



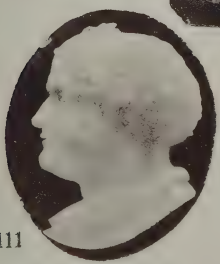
105

108



113
114

109



111

112

110

118

115

122

P

117

121

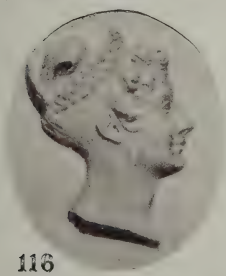
120

125

123

124

119



116

127

126

127 A

130
131
PROPRIO JAM JURE. ANNO PATRIÆ
INAUGURATUS
DIE
ANNO MDCCC
132
133
134
135
138
128
129
1823
141
136
142
139
140

144

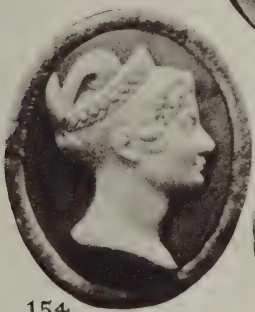
147

146

145

149

148



154

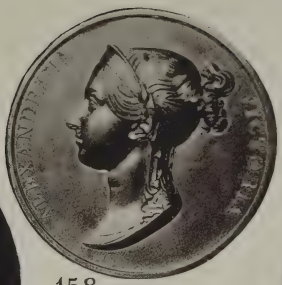
152

155

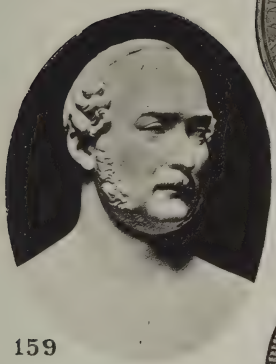
151

153

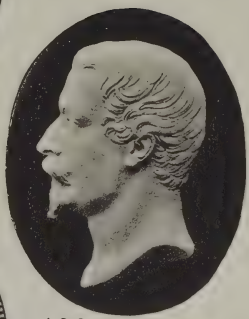
150



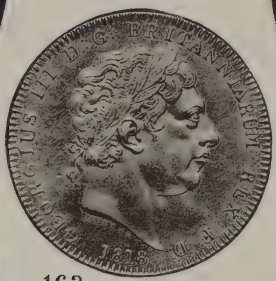
158



159

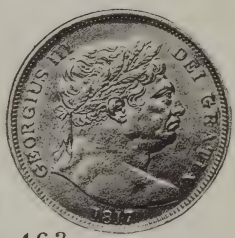


160

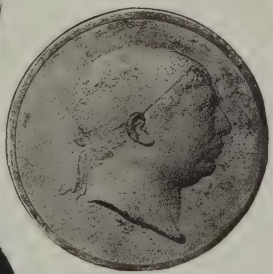


162

161



163



164

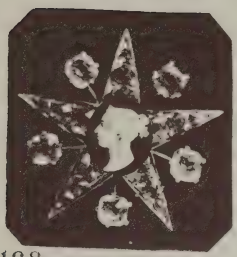
165

165.B

165.A

167

166



168

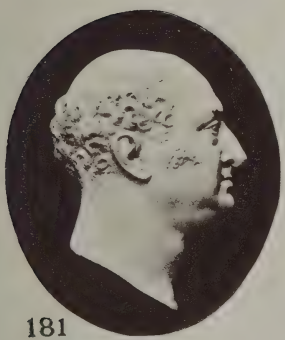
169

171

170

172

174



181

180

179

175

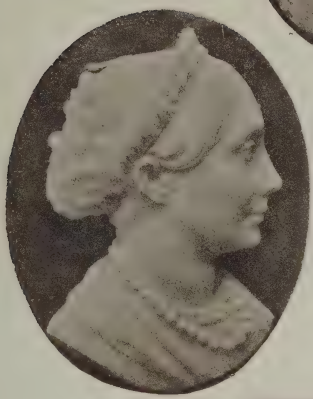
177

178

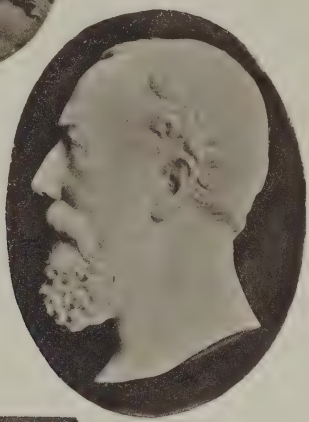
182

183

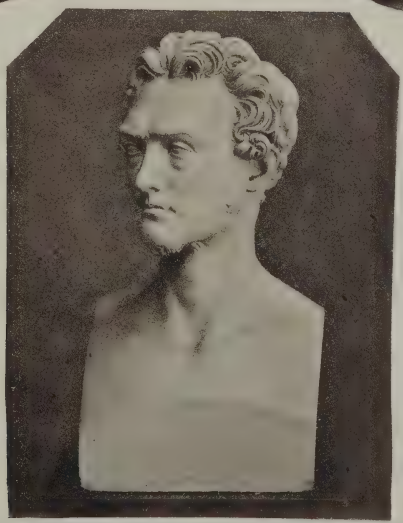
188



185



186



187

SCIENCE OF

GEMS, JEWELS, COINS, & MEDALS.

Second Edition, Revised and Improved. 8vo, price 21s.

CRITICAL NOTICES OF FIRST EDITION.

"This is a very pretty book, and is profusely illustrated. Dr. Billing is evidently a master of his subject, and writes like a thorough enthusiast. His book is full of curious and interesting information. Towards the end of the eighteenth century the collection of antique gems became a fashionable amusement both in this country and on the Continent; the desire for their acquisition, which was at first confined to a cultivated few, gradually spread till it grew into a perfect mania; dealers demanded and received enormous prices, and, as a natural result, the trade of the art-forger, which had never been altogether dormant in Italy, revived with extraordinary vigour. Now, what is the remedy for this state of things? Dr. Billing deserves much credit for pointing out the only real and efficient remedy."—*Times.*

"Dr. Billing's title is a wide one, but none will deny that his opinions are enunciated with sufficient clearness on the multifarious matters which he has undertaken to treat. Assuredly his trumpet utters no uncertain sound when he tells us that neither Greeks nor Romans were acquainted with steel, that modern gem-cutters have in their tools a great advantage over the ancient workmen, that the old adamant denoted, not our diamond, but corundum, and that the Murrhine vases were made of fluor-spar."—*Saturday Review.*

"In this beautiful volume, illustrated with one hundred and eighty-two photographs of the finest specimens, ancient and modern, of the medallist's and lapidary sculptor's exquisite arts, Dr. Billing has treated a very interesting subject with a high degree of ability, scholarship, and taste. The recent purchase of the Blacas Collection for the British Museum is likely to have revived the inclination for this fascinating study in the minds of many persons of leisure and cultivated intelligence. Those who despise it as frivolous may be advised to read Addison's graceful and thoughtful treatise on the utility of a knowledge of medals as a great help to historical and literary researches, and a most agreeable aid to the memory of dates. Others will, perhaps, regard both coins or medals and engraved gems simply as productions of artistic skill and genius, having an intimate connection with the other arts of design, and these will find in Dr. Billing's work a comprehensive and accurate account of all the processes and materials employed. The biographical details here given concerning the most celebrated artists of this department will not fail to interest even the general reader. We refer particularly to the memoir of the late Benedetto Pistrucci, engraver and medallist to the Royal Mint in London, who

has been compared with Benvenuto Cellini, and whose design for the great Waterloo medal (described and illustrated in this Journal so long ago as 1850) is one of the noblest examples of the art. His coronation medals of George IV. and Victoria, his St. George and Dragon sovereign, and his Wellington medal are familiar to most persons in England above the middle age, but not so many are acquainted with his design of purely ideal or classical subjects. Some of these, as represented by the photographs, are of surpassing loveliness. Dr. Billing devotes much space to the narrative of Pistrucci's career at Rome and in England, with some chapters of an autobiography, translated by Mrs. Billing, which is well worthy of perusal."—*Illustrated London News.*

" Dr. Billing's book, taking gems in the wider signification of jewels, is one itself, and of a sparkling and rare water. Not that it is because it overflows with learning, refined observation, cultivated taste, and a beautiful display of art in actual illustration, but that it is brighter still in the liberal spirit in which the author, devoting the scanty leisure of a busy, useful life to a pursuit confined to a fortunate few, now opens it up in the essence of its beauty to all who choose to read, and note, and admire. It is not often that the collector of curiosity or curious lore acts in the spirit of the Society for the Diffusion of Useful Knowledge. Liberality is a quality in the connoisseur of recondite fancy as rare perhaps as a perfect emerald, and when found deserves a special note of admiration. There is much temptation to follow Dr. Billing through his history of gem-engraving as a fine art. The curious reader can nowhere find a more instructive or pleasant guide, and he is always full of practical information and suggestion. There is ample information concerning intaglio and cameo, with all the processes employed by art, and a large exhibition of scientific knowledge as well in the account and criticism of material. Dr. Billing has the courage—and courage is required to breathe such heresy amongst the collectors — whilst admitting the excellence of gem art of antiquity, to allow admiration likewise for modern effort. This he has freely done and well in commenting on the finely illustrative specimens his book contains. Pistrucci, that great modern master, receives a generous and intelligent praise, and one of the interesting features of the volume is an autobiography of the artist translated by Mrs. Billing. The volume is very rich and representative of style in its illustrations. These comprise nearly 200 works, excellently photographed by Mr. F. Cole, of Euston Road, and, for the most part, of the size of the originals, which is the only way to give a just idea of each. That Dr. Billing is himself entitled to speak with some authority artistically, as well as a scholar, may be easily inferred from his own model of an infant, engraved in cameo, by Pistrucci, &c. The curious after information can have little difficulty in finding their way now and to an unfailing source in this interesting and very beautiful volume."—*Morning Post.*

LONDON: DALDY, ISBISTER, & CO., 56, LUDGATE HILL.

BY THE SAME AUTHOR.

SIXTH EDITION, REVISED AND IMPROVED.

8vo, cloth, price 16s.

FIRST PRINCIPLES OF MEDICINE.

"This classical work may have been 'revised,' but it could hardly be improved. We know of no book which contains within the same space so much valuable information, the result not of fanciful theory, nor of idle hypothesis, but of close, persevering clinical observation, accompanied with much soundness of judgment and extraordinary clinical tact."—*Medico-Chirurgical Review.*

"We should be ungrateful to any gentleman who has made such advances into a field of inquiry so unknown and so extensive as that of the nervous system, if we did not acknowledge our obligations for what has been produced. . . It is the leading virtue of the author never to lose sight of the bedside; and the numerous points of treatment in regard to the exhibition of remedies, distributed throughout the work, from the first page to the last, would, if extracted, alone form a catalogue worthy of being committed to memory."—*London Medical Gazette.*

"To take up a book by Dr. Billing is to be forcibly reminded of the genuine work that has been done in the promotion of medical science in the last generation. It is next to impossible for us to realise in imagination what was the state of our art when the now venerable teacher began his career. Dr. Billing became Physician to the London Hospital in 1822. Clinical lectures were then unknown in London, and he began them at once, as well as *post-mortem* demonstrations in the dead-house. The London Hospital has ever since maintained its position in the front of clinical work, and is not likely to let it fall. If we say that every successive edition has received the general approval of the press, we barely express the debt due by the Profession to Dr. Billing for the work he has so well done. He has furnished a generation with a set of well-reasoned 'principles' in medicine. Yet let it not be thought our author despises facts. Few works abound more in them; but then he uses his facts, instead of abusing them—reasons upon them, instead of merely repeating them—and, so doing, teaches his readers the one necessary lesson, to think. His is, therefore, a book to read through and through, to study, to master, and to think over. Yet there is not a more interesting work to merely dip into, for on every page some thought, some fact, some suggestion may be found which strikes the attention and leads the reader to pursue the subject. It is a great point with the author that he is, so to say, always speaking clinically."—*Medical Press and Circular.*

"The views are liberal, and becoming a medical philosopher. . . The observations on secretion and excretion, the growth and disappearance of tumours, &c., are well worth perusal: we only regret that space forbids us to do more than refer to them. . . The distinctions laid down between narcotics, tonics, stimulants, and sedatives will be found of much practical utility to students."—*London Medical and Physical Journal.*

"The work of Dr. Billing is a lucid commentary upon the first principles of medicine. We strongly recommend not only the perusal, but the study, of it to the student and young practitioner, and even to the ablest and most experienced, who will gain both information and knowledge from reading it."—*London Medical and Surgical Journal.*

"When a work of this kind has reached a sixth edition, it is altogether out of the pale of criticism. The public to whom it is addressed has stamped upon it its approval, and that is a guarantee of the excellence of the work. At the same time we may say that Dr. Billing has added much new matter to this sixth edition, and that he has shown himself no bigoted adherent to the views he maintained nearly half a century since. As time has gone on, bringing with it the immense achievements of the physiologist and chemist into the field of

medical research, the author of this treatise has had the pleasure of seeing many of his views confirmed, whilst with regard to many others he has had to give them an entirely new aspect. As an introduction to the study of medicine, and a book for general reading on a special subject, this new edition of Dr. Billing's book will, undoubtedly, take the same position as it has always previously done."—*Athenæum.*

"We have facts in abundance, but it requires the exercise of the highest order of intelligence to deduce from them the laws which govern, both in health and in disease, the wonderful machine called man. . . Having explained the nature and cause of inflammation, Dr. Billing examines the various modes of action of antiphlogistic remedies; and points out, in a very clear and philosophical manner, the principles which should guide the practitioner in their application. . . We can strongly recommend Dr. Billing's 'Principles' as a code of instructions which should be constantly present to the mind of every well-informed and philosophical practitioner of medicine."—*Lancet.*

"In this publication Dr. Billing has conferred upon the profession as great a service as he did in originating Clinical lectures in our hospitals (1822), the honour of the introduction of which exclusively belongs to him. Two such incidents in the life of a medical man are sufficient to secure to his name a lasting reputation."—*Monthly Chronicle.*

"We can imagine no more legitimate mode of producing a useful work than this; and Dr. Billing's opportunities of acquiring experience at the London Hospital, combined with the disposition manifested in these expressions, entitle his observations to great attention. . . That Dr. Billing, an active as well as independent thinker, should find materials for half-a-dozen reclamations, does in no degree so much surprise us as the good humour—little characteristic of reclamators—with which they are penned. Yet they comprehend important matters—the functions of nerves, the reflex principle, the theory of inflammation, the sounds of the heart, and the cholera; concerning all of which matters there has been much ink shed."—*British and Foreign Medical Review.*

J. & A. CHURCHILL, 11, NEW BURLINGTON STREET.

By the same Author.

ON THE

NATURE AND TREATMENT OF ASIATIC CHOLERA.

Fifth Edition, Revised, 8vo. Price 1s. by Post.

J. & A. CHURCHILL, 11, NEW BURLINGTON STREET.

Kolbe 75 (Dec 98) $140

Gems Jewels Coins and Medals